

2024.19.3

Remarks on Board Ship Mantua
Wednesday Sept 6th 1837

Begins with fine & pleasant breezes
from the S.W. at 1 P.M. come to anchor
in the outer roads at the Vineyard
employed in clearing the ship for sea
Middle fine pleasant at 3 A.M. weighed
anchor for sea at 11 A.M. cast anchor in
the Vineyard Sound in 9 fathoms of water
wind at S.W. & pleasant

Thursday
September
7th 1837



Begins with fine & pleasant weather
employed in getting fore & Mizzen top
gallant mast aloft wind at N.E. & S.W.
at 2 P.M. got under weigh for sea at 8
the pilot left the ship. Gay Head light S.E.
by Dist 3 miles Middle light and S.W. at
3 A.M. tacked ship to S.E. at 8 A.M. tack
the W. at 11 A.M. saw two ships bound in
all hands employed in fitting the boats

Friday
September
8th 1837

Begins with fine and pleasant breezes
from the S.E. standing to S.W. by the wind
ship under all sail at 4 past 3 P.M. tacked
to the Eastward at 6 P.M. tacked to the W.
with moderate breezes Middle & Latter the
same all hands employed in fitting the boats

Lat 39 34 & Long by thro 73 55 W

Remarks on Board Ship Martha
Saturday September 9th 1837



Begins with moderate breezes from the
Course & Middle brisk breezes the wind
head the ship off Sat 6 AM in main top galla
sail Latter employed in stowing the anchors
on Deck Latter calm

Lat 38-21 N

Sunday
September
10th 1837

Begins with calm and clear weather
with a heavy swell from the S E at 4
PM light breezes West course & D Middle
light breezes from S E ship by the wind
heading to the S E by the wind Latter squally

Lat 38-51 N Long by Chron 70-12 W

Monday
September
11th 1837

Begins with moderate breezes with
squalls of rain Ship by the wind heading
by the wind heading to the S E at 6 PM
heavy squall of rain double reefed the top
sails Middle squally steering S E were
S W Latter the same employed in ships duty

Lat 38-38 N Long by Chronometer 68

Tuesday
September
12th 1837

Begins with light breezes breezes Ship by
the wind heading to the S E wind from
the S W Middle brisk from the S W West
steering S E Latter squalls of rain sent aloft
the fore top gallant yard at 11 in fore top of sail

Lat 38-30 N Long by Chronometer 65 40 W

Remarks on Board Ship Martha
Sunday December 3rd 1837

Begins with brisk breezes from the N at 1 P.M. the Capt went on shore at the Isl of Tristan d'Acunoti at 6 P.M. returned soon a Barge tacked off shore with brisk breezes from N.W. at 2 A.M. in fore & Mizzen top sails I set reefed the main & more ship to the S.W. latter blowing heavy bying to near the Isl heading to the S.W. moon moderate

Monday
4th

Begins with moderate breezes made sail & more ship heading to the S.W. & wind from the N.W. middle column of the S.E. part of the Isl. Latter brisk breeze from the N ship under double reef top sails & courses beating up to the Isl

Tuesday
5th

Begins brisk breezes from the S.W. ship under double top sails with heavy squalls at 4 P.M. the ship was abreast of the landing place lowered about west on shore after hoys at 6 P.M. returned with several hoys at 7 P.M. the ship

Remarks on Board. Ship Martha
Tuesday December 5th 1837

ESE blows strong from the NW
middle heavy squalls latter more
moderate made sail on the ship course
ESE cloudy weather

Lat 37 05 S Long by Chronometer 8 15 W

Wednesday
6th

Begins with brisk breezes from the NW
course ESE at 4 PM got the L. anchor
on deck middle moderate breezes from
the W course ESE at daylight set
studdensails fine & pleasant

Lat 36 59 S

Thursday
7th

Begins with fine & pleasant weather
wind from the W course SE by E at
4 PM bent another fore top sail middle
light winds & thick weather latter
moderate from the NW steering
ESE under all sail caught a porpoise

Lat 37 50 S Long by Chronometer 4 55 W

Friday
8th

Begins with fine & pleasant weather
wind from the NW steering ESE
bent another main top sail middle
moderate breezes & cloudy latter foggy
wind the S W steering ESE employed
in reefing main top sail

Lat 38 01 S Long by Chronometer 2 33 W

Remarks on Board Ship Montez
Sunday December 17th 1837

Begins with calm at 2 P.M. light
breezes from the W course S E by E
Middle moderate breezes from the W
& W. Latter brisk breezes from the
N W & cloudy steering S E by E

Lat 37-08 S Long by Chronometer 18-40 E

Monday
18th

Begins with brisk breezes from the
N W course S E by E Middle moderate
breezes from the W & W north some squ
alls shorted sail Latter moderate made

Lat 37-11 S

Tuesday
19th

Begins with moderate breezes from the
W course S E by E at 4 P.M. heavy squalls of
wind & rain from the W double reefed
the top sails & pointed the mizen steering
S E by E Middle moderate at 4 A.M. saw
a ship of our lee beam steering S E
Latter squally from the W
to Ops

Wednesday
20th

Begins with brisk breezes from the W
steering S E under old sail squally at
2 P.M. carried away the fore top mast & the
denser boom in a squall reefed the top
sails Middle moderate made sail

Remarks on Board Ship Monitor
Wednesday 20 December 1839

saw a sail off our lar beam by the
wind heading to the Sth Latter fine &
pleasant course ESE wind at 1/2

Thursday
21st

Lat 36-7 S Long by Chronometer 28-9 E
Begins with fine & pleasant weather
wind from the N steering SE by E 1/2 E
under all sail Middle & Latter fine
& pleasant wind from the N course SE 1/2 E

Friday
22nd

Lat 36-4.0 S Long by Chronometer 30-31 E
Begins with fine & pleasant
weather wind from the N & E Middle
strong breezes in top gallant sails &
split the gib Latter ship under double
reef top sails employed in repairing
the gib & other duty

Saturday
23rd

Lat 36-24 S Long by Chronometer 34-17 E
Begins with strong breezes from the N & E
heading SSE by the wind at 1/2 of 1/2
Ship to the NE Latter moderate set
whole topsails & mizen top gallant
sail employed in repairing topsails

Lat 36-4.7 S Long by Chronometer 47-54 E

Remarks on Board Ship Mast

Saturday December 30th 1837

Begins with brisk breezes heading to the S by the wind middle squally shortened sail. Latter strong breezes from the S by the ship heading to the N by the wind under topsails & courses

Lat 26-40 S Long by Chr 44-07 E

Sunday
31st

Begins with brisk breezes from the S by the ship heading to the N by the wind at 10 PM wore ship to the S by the ship. Latter brisk breezes ship under double reef topsails

Lat 28-49 S Long by Chr 40-00 E

Monday
January
1st

1838

SAW

A

SHIP

Begins with moderate breezes & cloudy weather wind from the E by the ship under double topsails & courses heading to the S by the wind at 4 PM tacked ship to the N by the middle squally at 7 AM made sail same a ship steering to the N tacked to the S

Tuesday
2nd

Lat 29-04 S Long by Chr 40-04

Begins with moderate breezes & cloudy weather from the E by the ship heading to the S by the middle squally. Latter moderate moderate sail

Lat 28-18 S Long by Chr 40-04

Remarks on Board Ship Martha
Wednesday 3^d January 1838

Begins with strong breezes from the
E ship under topsails & courses heading
to the S by the wind Middle wind from
the E & E Latter the same ship heading
S by the wind.

Thursday
4th

Lat 29-12 Long by Chs 48-30 E

S.A.W. SPER

M. WHALES

Begins with strong breezes from the
E & E ship heading S by the wind under
topsails & courses whales came close to the
ship lowered but did not strike Middle
& Latter moderate breezes

Friday
5th

Lat 30-01 S Long by Chs 48-38 E

Begins with strong breezes from N E
ship heading to the S by the wind at 12
tacked to the N Latter strong breezes heading
N by the wind

Saturday
6th

Lat 30-12 S Long by Chs 48-50 E

Begins with brisk breezes from the E & E
at 1 P.M. tacked to the S E at 12 tacked to the
N by the strong breezes & squally Latter the
same heading up S by the wind at 12 tacked to S E

Sunday
7th

Lat 30-18 S Long by Chs 48-54 E

Begins with brisk breezes from the N E ship
ship heading to the S by the wind Middle
moderate Latter the same ship heading E & E

Lat 30-11 S Long by Chs 50-32 E

Remarks on Board Ship Martha

Sunday January 21st 1838

Began with a moderate breeze from the
SSE with a double reef top sails heaving
by the wind at 6 AM tacked to the SSE
Made the same latter moderate

Lat 27 23 Long by Chron 96 6

Monday
22nd

Began with strong breeze from the E
heaving by E in a double reef top
sails at 10 AM tacked to the SSE
at 12 PM tacked to the SSE
at 4 PM tacked to the SSE at 7 PM

tacked to the SSE and on a strong breeze
made 10 knots at 10 PM

Lat 27 23 Long by Chron 96 6

Tuesday
23rd

Began with moderate breeze from the E
heaving SSE by the wind at 10 AM tacked to
the SSE moderate set whole top sails
main top gaff and sail employed in mending
top sails

Lat 26 57 Long by Chron 96 6

Wednesday
24th

Began with strong breeze from the E
heaving SSE by the wind at 10 AM tacked to
the SSE at 12 PM tacked to the SSE at 4 PM
and made 10 knots at 7 PM tacked to the
SSE wind from the SE

Lat 26 57 Long by Chron 96 6

Journal of Board Ship
 Thursday January 25th 1858

SAW A SHIP

Began with light winds from the N.E. & clearing by 1 o'clock at 1 P.M. at 1 P.M. light breeze from the S.E. & clear to the E. by the wind. Middle moderate. Latter generally with thunder & lightning and a moderate breeze to windward.

Sunday
 25th

SAW
 A
 BARGE

Lat 25° 50' Long by the 18° 03' E. Began with light air from the N.E. leading to the S.E. by the wind at 5 P.M. boarded the British Barge from Singapore bound to London. Middle under short sail heading to the E. at 7 a.m. off 18° 10' off 1 wind still S.E.

SAW THE
 ISL OF
 MOROCCO

Saturday

Lat 25° 50' Long by the 18° 03' E. Began with moderate from the S.E. clearing by 10 at noon set short sail and heading to the S. at 10 a.m. saw ship to the S. by 1 o'clock made out at 10 a.m. saw the ship at 10 a.m.

Sunday
 26th

Lat 25° 50' Long by the 18° 03' E. Began with fine & pleasant weather and from the S.E. & clear. At 10 got out the anchor & bent the lines. Middle lying off 18° 10' Port & under fine weather ship under short sail at 10 a.m. set sail at 10 a.m. in a boat to the Port.

Remarks on Board Ship. Gormet

Wednesday February 7th 1838

SAW FIN BACKS

THE LAND

IN SIGHT

Begins with fine & pleasant weather
at 11 m. tacked to the E & S wind from the
S & E saw fin backs at sun set shortland
said & tacked to the S & E at day by 1st tacked
at 12 tacked to the S & E wind from the N & E
the land in sight

Lat 25-54 S Long by Chron 160-27

Long with brisk breeze from the N & E
heading to the S & E by the wind 11 m. D. to the
same at 10 m. tacked to the N.

Lat 26-11 S Long by Chron 160-09 E

Begins with brisk breeze from the E & S
I have no other heading to the S & E by the wind
at 10 m. tacked to the S & E 11 m. D. to the
same with breeze ship can see double reef topsails

Lat 26-52 S Long by Chron 160-50 E

Begins with brisk breeze from the front
the N & E by heading to the S & E by the wind
at 10 m. tacked to the S & E at 10 saw a Barque
of our weather now steering to the N at 12
tacked to the S & E fine & pleasant

Lat 27-00 S Long by Chron 161-00

Begins with light breeze from the N & E
clouds now working out of the weather
at daylight saw a Barque of our weather
to the N & E fine & pleasant

Lat 26-02 S Long by Chron 161-00

Remarks on Board Ship Montha
Monday Feb 12th 1838

Begins with moderate breeze from the
E heading to the NE by the wind at 4 PM
the ship is at 10 AM tacked to the NE &
later tacks across ship under four
or five top sails and day in ship's Out
Lat 20-46 N Long by Chron 20-31 E

Monday
13th

SPAKE
THE REAPER
CIVNEL

Begins with light breeze from the E ship
heading to the NE by the wind at sunset
tacked to the E at 1 PM tacked to the NE at
day light saw a Barge off our lee bow
at 5 spots her the Reaper of Salem bound
out 1400 spinn on an another sail at 10 spots
her the Connecticut of N London 8 months out
1500 the two in

Lat 25-01 N Long 48-12 E

Thurs
14th

Begins with moderate breeze from the
E heading to the NE by the wind at sunset
the same at 3 PM more ship to the NE at 5
PM tacked to the NE by the wind in P.M.
with the ship

Lat 23-40 N Long 48-40 E

Thurs
15th

Begins with fine & moderate breeze from
E heading to the NE at sunset shortland
oil Middle pleasant at 7 PM tacked to the NE
the Tanager in sight

Lat 20-52

Remarks on Board Ship Martha
 Today February 21st 1830

SAW A SAIL

SAW FINBACKS

Began with strong breeze from the N.E. by
 heading to the S.W. & by the wind at 6 A.M.
 wore ship and shortened sail at 12 noon & kept
 to the S.W. & at daylight saw a sail bound to the
 N.W. made sail five & pleasant wind from the
 N.E. saw fin backs

Saturday
 22nd

Lat 26 02 Long by the 65 45 E

SAW FINBACKS

SPARK RAIN

SAW 1 SAIL

Began with fine & pleasant breeze from the N.W.
 heading to the S.W. by the wind wore fin backs
 at 4 past 4 saw a sail & wind of sea down at 7
 P.M. spoke her the Ranger & kept shortened
 sail heading to the N.W. at 10 noon ship
 to the N.W. at daylight made sail at 6 A.M.
 wore at 10 A.M. & wind from the N.E. fine
 pleasant at 10 saw a sail ahead. breaking over
 after 10 P.M. 10 miles

Lat 26 02 Long by the 65 45 E

Sunday
 23rd

SAW FINBACKS

Began with fine & pleasant weather wind
 to the N.W. by the wind wore fin backs
 at 10 A.M. shortened sail at 12 noon & kept
 the N.W. & kept on with a sea & wind of sea
 4 P.M. from the N.W. to a sea & wind of 4 light
 in from the N.W. to a sea & wind of 4 light
 weather employed in ship duty

Lat 26 00 Long by the 65 49

Journal of Dr. H. M. Mearns

Monday February 21st 1880

Began with first pleasant breeze from the
N. E. strong & it at once set about the work.
Worked to the N. E. & S. E. & the N. E. at the same
ship to the N. E. at day with wind sailing
the N. E. & S. E. & the N. E. at day with wind sailing
from the N. E.

At 12 o'clock by the N. E.

Monday
Feb 21st

Began with first & pleasant weather wind from
the N. E. & S. E. & the N. E. at day with wind sailing
from the N. E.

SPORTS BAPPE

SAWYER BAPPE

At 12 o'clock by the N. E.
Began with first & pleasant weather wind from
the N. E. & S. E. & the N. E. at day with wind sailing
from the N. E.

At 12 o'clock by the N. E.

Monday
Feb 21st

Began with first & pleasant weather wind from
the N. E. & S. E. & the N. E. at day with wind sailing
from the N. E.

At 12 o'clock by the N. E.

Monday
Feb 21st

Began with first & pleasant weather wind from
the N. E. & S. E. & the N. E. at day with wind sailing
from the N. E.

Remarks on Wind Ship Weather

Thursday March 14 18

SPOKE THE
MARGARET

as seen from the ship top sail at 10 AM on ship
of course at 11 AM at 12 spoke the
Margaret of St Johns

Lat 24 42 S Long by the 15 20

Friday
15

SAW THE
OF
MADAGASCAR

By night with strong breeze from the E heading
to the A) E in the night the Margaret at 4 P
looked to the S) E employed in looking the
ship in sight then the S) E latter the same

Lat 24 42 S Long by the 15 20

Saturday
16

PASSED THE
REAPER

By night with strong breeze from the S) E
ship with a double reef top sail employed
in looking at 10 PM for the ship sailing across
ship to the S) E the ship's strong breeze heading
to the S) E the S) E was forced to wear
round of us at 10 AM ship in the night the same

Lat 25 01 S

Sunday
17

SEVERAL SHIPS
IN SIGHT

By night with strong breeze from the S) E
ship with a double reef top sail heading to the
S) E at 1 PM the Margaret came
ships in sight at 10 PM on ship A) E strong
breeze considerable reef spread in the night
with the breeze - thick weather

Lat 25 01 S

Monday
18

By night with strong breeze from the S) E
of our course & course to windward at 7 PM
ship O) E made sail latter morning of our

Margaret in sight

Lat 25 34 S

Remarks on the Ship Martha
Tuesday March 11th 1850

JOSE REAPER
&
MARGARET

Began with light breeze north. wind
squally with variable rain at 1 P.M. of the
the Rainy & Margaret at sea at shortland
sail having a cable by the wind latter fine
of pleasant steering and employed in steering
down at

Lat 41° Long by the 50 20 E

Wednesday 7th Began with fine pleasant weather rain
from the 11th light in 10 with the morning
middle of latter light breeze steering to wind
from the 20th

Lat 40 00 Long by the 50 00 E

Thursday 8th Began with light breeze from the 11th steering
at sea at shortland sail in 10 with the morning
middle light breeze latter the same steering
to the 11th fine of pleasant

Lat 39 00 Long by the 49 30 E

Friday 9th Began with moderate breeze steering to the
at 12 M. light to the wind to the 11th the wind
from the 11th of the morning and kept off 11th
at 12 light to the wind to the 11th at day light
made sail at 10 A.M. that the morning and of them
Passy some deep 10 minutes out 200 fath.

SEBASTIAN
MARGARET

Lat 26 00 Long by the 48 15 E

Remarks on Board Ship the
Young March 18th 1858

SAW A LARGE
SPERM WHALE

SPOR THE
BARQUE
OCTAVIO
&
SHIP

ENDEAVOUR

Began the morning breeze from the ESE
blowing off. Saw at 2 p.m. a large sperm
whale with a white back but saw no more of him
at first. At 3 p.m. saw a small off shore
barque standing to the N. by the way of
sailing at 12 noon on shore at night
were in more than 100 yds of ship ahead
at 7 a.m. were off shore at 10 spoke the ship
& saw one of it Bedford Sept 1858
at 11 spoke the Barque Octavo left of off
7 months at 800 yds by western ship under
double reef top sails

Lat 24-16

Saturday 17th
Breeze with strong waves from the S. by E
leading in shore of shore the I. under a 2nd
sperm whale saw one oil 3 loads but did not
strike at 7 p.m. at 10 p.m. saw one off shore
at 10 p.m. saw one rather wind from the
N. by E. at 11 p.m. saw one off shore at 10 p.m.

SPOR THE
FLORIDA

SAW WHALES

Sunday
18th

Began with moderate breeze from the
N. by E. at 1 p.m. at 2 p.m. lifted to the
N. by E. with the Florida & Endeavour
at 3 p.m. left off shore at 4 p.m. saw one
with rain at 5 a.m. a fine & dry at 10 a.m.
at 10 p.m. saw one at 10 p.m. saw one
at 11 p.m. saw one at 11 p.m. saw one
at 12 p.m. saw one at 12 p.m. saw one

END

Remains in Ired Sea. Monday

Monday March 19th 1898

SAW 3 SHIPS

Began with moderate gales from the
Ship lying to under last reef mains
top sail & staysails heading to the S by W
at 10 AM more ship Middle strong gales
at daylight 10 AM 3 ships at 4 AM more
ship to the N by W wind from the N by E ship
under last reef top sails

Lat 14 26 S

Tuesday
20th

Began with moderate gales from the
N by E heading to the N by W at 6 AM more ship
to the E at Day light kept off last 10 AM
with strong breeze from the N by E
in afternoon from E by N by E

Lat 14 10 S

Wednesday
21st

SAW 1 SHIP

MADAGASCAR

Began with strong breezes from the N by E
more ship to the N by W at 10 AM the land in
night kept to the wind heading to the N by E
and the top sails bent the fore sail at 6
AM more ship heading to the N by E under
top sail & staysails heading to the N by E
heading to the N by E wind N by E fine off / Casuar

Lat 14 00 S

Remarks on Board Ship Mover the Thursday March 29th 1838

CATANCHOR
IN AUGUSTINE
BAY

Begins with strong breezes from the S.W.
storing & by at 2 P.M. saw the land
at 3 P.M. kept the ship & D. reefed reefed
the fore & Miz top sails at 5 P.M. cast on
chor in Augustine Bay in 15 fathoms and
saw several ships lying at anchor. Rather more
was employed in ships duty

Friday
30th

Begins with strong breezes from the S.W.
employed in ships duty at 4 P.M. the board
returned with timber for the night heads
Middle breeze squalls from the S.W. ship. D. was
used into 20 fathoms water let go the second
anchor at daylight hove up both anchors
employed in sweeping up the ship at 12 cast
anchor in 7 fathoms water reaching bottom

CATANCHOR

Saturday
31st

Begins with moderate breezes from the
N.W. the middle strong breezes from the S.W.
wind from the N.W. employed in repairing
the night heads

Sunday
April 1st
1838

Begins with strong breezes from the W. at 6
the Bargee Hope cast anchor. Latter light
breezes from the S

Remarks on Board Ship Manhattan
Monday April 2nd 1858

Begins with moderate breezes from the
N. & N. E. on the Ship. Breeze of land
cast on shore. Middle light breezes. Lighter
employed in supercargo the night heads as
is got a raft of water along side.

Tuesday
3rd Begins with moderate breezes from the
N. & N. E. on the raft of water. I have
on ship and Middle light breezes. Lighter
employed in supercargo the night heads.

Wednesday
4th Begins with light breezes from the N. & N. E.
Lighter the boats went after water for the
night heads.

Thursday
5th Begins with strong breezes from the N. & N. E.
at 12 m the boat returned with more water.
Middle light breezes at 5 a.m. the boat
left the ship to go after a breast boat. After
black & the N. E. side heated the ship
with the other side fine & pleasant.

Remarks on Beech Ship Weather

Friday April 10 1850

Begins with strong gale from the N. E. heading to the S. E. & will in all cases require much fuel to make moderate at sea we must be careful to the S. E. to avoid from the S. E. but the gale subsides & I start it again.

Lat 42-50 Long by the 41-50

Remains Begins with fine & pleasant weather from the S. E. Middle light breeze latter part of the day steering S. by E. in repairing the fore sail.

Lat 26-18 Long by the 41-50

Begins with light breeze from the S. E. steering S. by E. in making her sharp corner Middle light breeze it calm squalls from the wind at N. E. & S. E. S. E. fine & pleasant.

Lat 21-21

Monday 16th

Begins with moderate breeze from the N. E. steering S. E. fine & pleasant weather at 12 M. Breeze up to the fore part of the ship breeze latter the same up fore & may be go than in flying gale breeze wind at N. E. & S. E.

Lat 20-00 Long by the 41-50

Remarks on Board Ship on the
 Tuesday April 17th 1838

Began with moderate gale from the N
 steering N at 6 PM sheeted sail under
 fresh breeze latter more moderate made
 sail under foresail steering E by N & completed
 in making span yarn

Lat 46° 17' Long by the 25-008

Wednesday
 18th

Began with strong breeze from the N
 E by N at 10 AM sheeted sail Middle and
 main made sail engaged in breaking out
 after half of 10 AM

Lat 46° 00'

Thursday
 19th

Began with moderate breeze steering E by
 steering to the N E by the sun saw 2 ships
 to leeward at 4 PM spoke them the Port of
 of 1 on Buzz of Gen Pike of 1 on Redford
 Middle heading S E by the wind according
 Double reef topsails at day light made sail
 2 ships to leeward at 4 PM of 1 on 2 on 2 on
 whaler toward leeward to windward
 leeward the boat but did not strike at 11 PM
 of the chase moderate S steam

SPOKE THEM

PORTLAND

NEWBURY

SAW SPERM

WHALES

Lat 46° 30' Long by the 25-008

4. 2. 380

Ch. De

SATW.A. BRIG

SPERM. WHALES

Saturday
21st

SAW A SHIP.

Sunday
 22nd

SALW. SPERM

WHALES

Remarks on Board Ship Martha
Monday April 23rd 1852

Y

Tuesday
24th

SAW SEVERAL
WHALES

Began with moderate breeze from SE
heading to the NE at 9, two 2 just ahead of
us to the whole long side of ship in motion
very slowly & we were then the first to
stop with trying to by the hand until daylight
heading to the NE when the head in more
with steering to the wind from the SE
at 2:50 going by the SE 42°

Began with moderate breeze from the
SE & steering to the wind at 10:30
heading to the wind SE employed in towing
at 11:30 we were back steering to the SE at 4:00
we saw a large whale ahead at 11:00 and at 12:00
the 1st

Wednesday
25th

SAW SEVERAL
WHALES

Began with fine & pleasant weather and
at 10:30 a large whale at sunset cut
from the water & came on board at sunset
with wind at 10:30 heading to the SE at 2
at 10:30 we were at the SE at day light
and at 11:00 we were at the SE at 4:00 we were
at 11:00 we were at the SE at 4:00 we were
at 12:00 we were at the SE at 4:00 we were

Remarks on Board Ship. Weather.

Wednesday May 2nd 1838

THE LAND
IN SIGHT

Begins with fine weather from the SSE
heading to the E at 5 P.M. put the boat out
shortened with middle of bottom strong
braces from the P & C ship under double reef
topsails the land in sight

Lat 25 42 S Long by Chron 178

Thursday
3rd

Begins with fine weather wind from the
ESE heading to the S by the wind at 10 P.M.
tacked ship. Middle brist braces at 6 A.M.
tacked to the N on bent the main top sail
of boat another the land in sight

Lat 25 27 S Long by Chron 178

Friday
4th

Begins with brisk breeze from the ESE
at 1 P.M. tacked to the SE. Latten the same set
gib shank in. Mainmast

Lat 25 18

Saturday
5th

Begins with brisk breeze ship under
double reef topsails heading to the SE. Wind
from the N. Middle brist same bottom light
braces with main

No Obs

Sunday
6th

Begins with light breeze from the N. W. at
10 P.M. employed in repairing topsails. The
mainmast brist the same ship
from the SE under double reef topsails

Lat 25 38 S Long 178

Breeze in Round Ship Mouth
Monday May 7th 1800

Breeze with moderate breezes from the
N. & N. E. & Middle breezes from the
S. & S. W. the sun starting N. E. & fine weather
Lat 23-29 Long by Chron 50-00

Monday
8th

Breeze with moderate breezes of fine weather
wind from the S. & steering N. E. at sun
set shifted to S. at 5 P. M. shifted to the
wind heading to the S. at 2 A. M. more ship
at day light made sail steering N. E. & W.
fine & pleasant

Lat 27-00 Long by Chron 50-30

Tuesday
9th

Breeze with fine & pleasant weather wind
from the N. & steering N. E. at sunset shifted
sail shifted to the wind heading to the S. at 5 P. M.
more ship at 2 A. M. more breeze at
day light made sail better fine & pleasant

Lat 28-15 Long by Chron 50-20

Wednesday
10th

THE LAND
IN SIGHT

Breeze with fine weather wind from
the N. E. steering N. E. & W. Middle steering
N. E. at 12 shifted to the wind with the head
of the ship back to the steering to the land in sight

Lat 26-29 Long by Chron 57-37

Thursday
11th

TOOK THE

THE

Breeze with brisk breezes from the N. E.
steering to the N. E. & W. by the wind at 5 P. M. shifted
ship to the S. & Middle brisk breezes at 6 A. M.
more ship to head at 10 spot the bottom
of the land

Remarks on Board Ship from the
Sunday May 20th 1835

Began with strong breeze from the N.E. leading
 to the N. by the Messenger on sight at 12 P.M.
 Lacked to the N.E. and did not see the Messenger
 by 10 breeze at 11 A.M. did not see the land
 during the day in sight

Lat 21-30

SAW THE
 MESSENGER

Began with thick & cloudy weather soon
 from N.E. middle the Messenger on sight at sun
 set in fore of rising top sails & kept her to the
 wind at daylight set fore top sail & then
 went from the N. blowing a moderate
 gale the Messenger on sight by 10

Lat 21-45 Long by 15-50 W

Sunday
 21st

Began with a strong gale from the N.E.
 with squalls of rain at 12 M. in fore top sail
 lost sight the Messenger kept to the wind
 bearing N. by E. the Messenger more
 windens to set double reef top sails nearly
 wind from the N.

Lat 22-00 Long by 15-15 E

Tuesday
 22nd

THE LAND
 IN SIGHT

Began with brisk breeze from the N.E. moving
 to the N. double reef top sails at sunset the Messenger
 sail latter equally the Messenger usual
 the land in sight

Lat 22-25

Remarks on Board Ship *Mercury*
Thursday May 26th 1838

Begins with calm with squalls of rain
at 11 M breeze from the E with rain bearing
to the S by the W. At 12 M rain falls when
I saw the land in sight

Lat 20° 66'

Friday
27th

Begins with light breeze from the E & S
bearing to the S by the W. At 12 M rain falls
at 1 P M the rain with rain

Lat 20° 52' Long by the 50° 40' E

Saturday
28th

Begins with strong breeze from the E & S
bearing to the S by the W. At 12 M rain falls
at 1 P M the rain with rain

Lat 20° 52' Long by the 50° 40' E

Sunday
29th

SAW A SHIP

Begins with strong breeze from the E & S
bearing to the S by the W. At 12 M rain falls
at 1 P M the rain with rain

Lat 20° 52'

Monday
30th

SPOR THE
MESSENGER

Begins strong breeze from the E & S bearing
to the S by the W. At 12 M rain falls
at 1 P M the rain with rain

Lat 20° 52' Long by the 50° 40' E

Remarks on Beave Ship's Manned

Tuesday 8th 1818

Beave with fair & pleasant weather
wind from the S.W. to S. by S. at 10 AM
hove about 10 AM at 12 the light breeze increased
and the steering at E. wind at 1

Wednesday
9th

Beave with strong breeze from the S. the
wind at 12 the light breeze at 10 AM and
double reefed the top sail & double reefed the
top sail & hove in 10 fathoms water in
the long of day & hove in several fathoms
through the night from 10 the same depth
of water at 10 AM off to the S. and all night
breeze calm

Thursday
10th

Beave with calm at 12 the light breeze
the S.W. & pleasant weather at 10 AM
day at 12 the light breeze double reef the top sail
the 10 AM the wind from the S. by S. pleasant
breeze all night & day to the S. by S. by the wind
Latter steering at E. wind at 10 AM steering
anchors the land 10 miles off

Monday
11th

Beave with strong breeze from the S. the
at 12 the light breeze at 10 AM the
breeze off shore at 10 AM more in the
light moderate breeze pleasant day
at 10 AM off E. wind of Madagasc

Records on Board Ship Martha Tuesday June 12th 1838

There was much fine & pleasant weather
wind from the S. blowing to freshen the sea
about noon we all went up & set out a net
to catch the fish to the wind of shore with
the main by sail about at day light kept
offshore to the blowing strong the land
was not lost.

Wednesday
13th

Lat 42° 21' N

WELAND
IN, 11° 41' N

Began with strong breeze from the S.
steering it at 1 P.M. passed the S. point of
Long Island at 4 P.M. & went full speed
forward but lowered the main & the leading
offshore at 8 P.M. at 9 P.M. by the wind
from the S. blowing to the S.W. by the wind
land is visible at 10 P.M. from the ship
in the morning we were going.

Lat 42° 10' N

Thursday
14th

Began with fine & pleasant weather
from the S. blowing to the S.W. by the wind
all day the S.W. the same at 7 P.M. made
the S.W. point of the 14th.

Friday
15th

Lat 42° 10' N long by the 14th at 10

Began with weather at 7 P.M. by the wind
from the S. the same at 11 P.M. by the wind
the wind at 11 P.M. by the wind from the S.
breeze from the S.W. at 1 P.M.

Lat 42° 10' N long by the 14th at 10

Remarks on Board Ship March

Saturday 16th

SAW THE
LAND

Begins with moderate breeze from the Nth at 12 m. till 1 o'clock the wind freshens & rain falls. At 1 o'clock the wind shifts to the S by E & rain ceases. At 2 o'clock the wind shifts to the S & off over the water in a calm.

Sunday
17th

CAME TO
ANCHOR

Begins with calm till 12 m. at 1 o'clock the wind shifts from the Nth to the S by E & at 2 o'clock the entrance of Passaic river is seen. At 2 o'clock the wind shifts to the S & rain falls. At 3 o'clock the wind shifts to the S by E & rain ceases. At 4 o'clock the wind shifts to the S & off over the water in a calm. At 5 o'clock the wind shifts to the S by E & rain falls. At 6 o'clock the wind shifts to the S & off over the water in a calm. At 7 o'clock the wind shifts to the S by E & rain falls. At 8 o'clock the wind shifts to the S & off over the water in a calm. At 9 o'clock the wind shifts to the S by E & rain falls. At 10 o'clock the wind shifts to the S & off over the water in a calm. At 11 o'clock the wind shifts to the S by E & rain falls. At 12 o'clock the wind shifts to the S & off over the water in a calm.

Monday
18th

Begins with fine weather & light breeze from the Nth till 1 o'clock when the wind shifts to the S by E & rain falls. At 2 o'clock the wind shifts to the S & off over the water in a calm. At 3 o'clock the wind shifts to the S by E & rain falls. At 4 o'clock the wind shifts to the S & off over the water in a calm. At 5 o'clock the wind shifts to the S by E & rain falls. At 6 o'clock the wind shifts to the S & off over the water in a calm. At 7 o'clock the wind shifts to the S by E & rain falls. At 8 o'clock the wind shifts to the S & off over the water in a calm. At 9 o'clock the wind shifts to the S by E & rain falls. At 10 o'clock the wind shifts to the S & off over the water in a calm. At 11 o'clock the wind shifts to the S by E & rain falls. At 12 o'clock the wind shifts to the S & off over the water in a calm.

Tuesday
19th

Begins with fine weather & light breeze from the Nth till 1 o'clock when the wind shifts to the S by E & rain falls. At 2 o'clock the wind shifts to the S & off over the water in a calm. At 3 o'clock the wind shifts to the S by E & rain falls. At 4 o'clock the wind shifts to the S & off over the water in a calm. At 5 o'clock the wind shifts to the S by E & rain falls. At 6 o'clock the wind shifts to the S & off over the water in a calm. At 7 o'clock the wind shifts to the S by E & rain falls. At 8 o'clock the wind shifts to the S & off over the water in a calm. At 9 o'clock the wind shifts to the S by E & rain falls. At 10 o'clock the wind shifts to the S & off over the water in a calm. At 11 o'clock the wind shifts to the S by E & rain falls. At 12 o'clock the wind shifts to the S & off over the water in a calm.

Wednesday
20th

CAME TO
ANCHOR

Begins with light breeze from the Nth at 12 m. At 1 o'clock the wind shifts to the S by E & rain falls. At 2 o'clock the wind shifts to the S & off over the water in a calm. At 3 o'clock the wind shifts to the S by E & rain falls. At 4 o'clock the wind shifts to the S & off over the water in a calm. At 5 o'clock the wind shifts to the S by E & rain falls. At 6 o'clock the wind shifts to the S & off over the water in a calm. At 7 o'clock the wind shifts to the S by E & rain falls. At 8 o'clock the wind shifts to the S & off over the water in a calm. At 9 o'clock the wind shifts to the S by E & rain falls. At 10 o'clock the wind shifts to the S & off over the water in a calm. At 11 o'clock the wind shifts to the S by E & rain falls. At 12 o'clock the wind shifts to the S & off over the water in a calm.

Records on Board Ship. Winthrop
Thursday 21st June 1828

11

Began with a small breeze & wind began
in painting ship. Middle of latter left
breeze fresh & pleasant

Friday
22nd

Began with a small breeze & fine
weather employed in painting & getting
wood water ready & in the forenoon the breeze

Saturday
23rd

Began finishing painting the ship got some
boat loads of wood for the stove. Latter evening
wind in blowing out cold for evening

Sunday
24th

Began with a small breeze & fine weather
Latter part of pleasant

Monday
25th

Began with brisk breeze from the West. In
the forenoon went on shore to get English
bread at 10 AM and after a lot of water

Tuesday
26th

Began with fine weather the breeze
continued with water till 4 PM. Latter part
blowing water at 4 PM the cook brought
the ship. Latter got some small fishes
from the shore

Remarks on Board Ship Monitor

Saturday July 7th 1855

SAW THE IS
OF JOANNATI

Begins with fine & pleasant weather
staying till 10 wind from the N at 12 noon
the ship goes on with 20 miles off shore & home
at sun set 10.5. Lined with standing to the S by the
by the wind at 2.0 in more ship at 2.0 at day
light 10.5. Lined with 10.5. Lined with 10.5.

Sunday
8th

CAME TO
ANCHOR

Begins with calm at 12 in light breezes from
the S running down the Th side of the Is at 1.0
came to anchor at 9.00 in 17 fathoms
water 1 mile to the S of the lower Middle Island
Built by 1.0 of Lateral at anchor latter 1.0 with
ship on the 1.0

Wind
9th

Begins with light breezes from S.E. at sun
set all of the watch returned on board latter
employed in getting water

Tuesday
10th

Begins with fine & pleasant weather employed
in stowing down water & work on shore
latter employed in getting of water & stowing
it away fine & pleasant

Wednesday
11th

Begins with fine & pleasant weather employed
in stowing water latter got the last 1.0 on the
shore. the Brig Ship of London came to a

Remarks on Board Ship Martha

Thursday 12th July 1815

Begins with light breeze to S.E. middle
the sun rather employed in setting up a fog

Friday 13th Begins with moderate breeze from the N.
employed in setting up a foggy middle
fine & pleasant weather strong squalls of wind
from the S.W. some the ship some rain

Saturday 14th Begins with strong breeze from the S.W.
middle of latter calm and pleasant

Sunday 15th Begins with fine & pleasant weather to the
the sun

Monday 16th Begins with strong breeze from the N. at
12 o'clock at 4 o'clock at 6 o'clock at 8 o'clock
nearly every steering to

Tuesday 17th Begins with strong breeze from the S.W.
at the S.W. by the wind at 2 P.M. the wind
the top sails were a sail & part of sea weather
from at 1 P.M. to the S.W. at 11 P.M.
looked to the S.W. go down in sight

Lat 12-10 Long by the 13-58 E

Remarks on Board Ship Moor

Tuesday July 31st 1848

Begins with strong breeze from the
SE Middle pressure latter with fine
light pleasant

Wednesday 1st
August Begins with moderate breeze from the E
Middle the same latter strong pleasant

Thursday 2nd
Begins with light breeze from the SE
Middle the same latter light breeze from
the SE about a mile long in shore

Friday 3rd
Begins with light breeze from the SE Middle
the same latter light breeze from the SE pleasant

Saturday 4th
Begins with light breeze from the SE latter
strong breeze from the SE pleasant

Sunday 5th
Begins with strong breeze from the SE
Middle latter the same

Monday 6th
Begins with strong breeze from the SE Middle
latter the same

Tuesday 7th
Begins strong breeze from the SE Middle
moderate 11 am. set the anchor

Remarks on Board Ship Martha
Tuesday September 11th 1838

Begins with fine & pleasant weather heading
to the S by the wind at 2 P.M. employed in making
up run & on at sun set shortened sail Mudd
& later heading up S by E

Lat 28-05 Long by Star 40-50 E

Tuesday
12th

Begins with fine & pleasant weather and from
the S by ship heading to the S by E at sun shortens
sail light breezes from the N steering S by E
later the same steering S by E employed in
making up run & on sun in back

SAW PLW

WAXES

Lat 28-11 Long by Star 41-34 E

Wednesday
13th

SAW SHIPS

Begins with light breezes from the N steering
S by E Mudd light air later the same at sun
saw 2 ships bound to the N fine & pleasant

Lat 28-58 Long by Star 42-25 E

Thursday
14th

Begins with moderate moderate breezes from
the E heading S by E by the wind Mudd strong
breezes from the S at 2 P.M. double reefed the top in
it later the same sun in back

Lat 29-26 Long by Star 44-05 E

Friday
15th

Begins with strong breeze from the S by E heading
S by E later light breeze Mudd at sun employed
in painting boats

Lat 30-34 Long by Star 45-40 E

Remarks on Board Ship Martha

Thursday September 27th 1838

Begins with strong breezes from the N^W steering E by S at sun set shortened sail luffed to the wind heading to the N^W at daylight move east steering E by S by the wind at 11th equally employed in reefing the main top sail

Lat 51st 00' Long by Chron 68-13 E

Friday
28th

Begins with moderate breezes from the N^W steering E by S at sun set shortened sail luffed to the wind at daylight moderate breeze steering N^W by E wind at 11th equally

Lat 36-07' Long by Chron 67-00 E

Saturday
29th

Begins with strong breezes from the N^W steering N^W by E under Double reef top sail at sunset luffed the ship to the wind heading to the N^W middle strong gale trying to under close reef main top sail at 11th the wind shifted to the S^W at Double reef top sail steering N^W

Sunday
30th

Lat 28-14' Long by Chron 68-20 E

Begins with strong breezes from the N^W steering N^W by E at sun set shortened sail and to the wind heading to the N^W at 11th kept the ship off N^W under Double reef top sail saw black fish

SAW

BLACK FISH

Lat 34-00' Long by Chron 68-43 E

Remarks on Board Ship Martha

Monday October 1st 1835

SAWA
SHIP

Began with strong breezes from the N
steering S and on double reef top sails at sun
set shortened sail & kept to the wind at 6 am
saw a ship to windward latter heading S
the 2th steering S

Lat 34 54 S Long by the 4 24 E

SPARE THE
TUSCARORA
SAW
SPERM

WHALES

Began with strong breezes from the N
steering to the S by the wind at 5 P M after
the ship Tuscarora of Cape Spring 12 months
out 800 W at sun set shortened sail at day
light made sail steering S at 6 am saw sperm
whales lowered all boats & struck & saved no
whale at 12 gave up the chase & came on board

Lat 35 00 S

SAW SPERM
WHALES
A SHIP

Began with strong breezes from the N
steering to the S by the wind at 2 P M move ship
at 5 P M saw sperm whales lowered all 3 boats
& struck 3 whales broke 1 & won pointed 1 & won
strap & lost 2 lines of the whales very weight
at sun set came on board Middle heading to
the S by the wind double reef top sails at
2 am move ship at 4 am saw a ship ahead
came for boats at 10 am ship to the S

Lat 35 51 S

18 months on board the ship the

afternoon October 15th

Began with moderate gale steering S by E
at sun set bore the ship to bearing S by E
at day light made sail steering S by E and at
that thick weather in a variable way to pass

Lat 35 53rd Long by the 75 31st E

Monday
14th

Began with the very heavy thick weather
steering S by E at sun set bore the ship to the wind
of a moderate gale steering S by E and at
day light bore the ship to bearing S by E
by the wind was clear that

Lat 35 28th

Tuesday
15th

S. W. P. N.
B. A. C. N.

Began with the very heavy thick weather
steering S by E at sun set bore the ship to the wind
of a moderate gale steering S by E and at
day light bore the ship to bearing S by E
by the wind was clear that

Lat 35 16th

Wednesday
16th

Began with the moderate breeze from S by E
steering S by E at sun set bore the ship to the wind
of a moderate gale steering S by E and at
day light bore the ship to bearing S by E
by the wind was clear that

Lat 35 52nd Long by the 77 41st E

Thursday
17th

One part
on
S. P. - 26

Began with moderate gale from the S
steering S by E at sun set bore the ship to the wind
of a moderate gale steering S by E and at
day light bore the ship to bearing S by E
by the wind was clear that

Lat 35 26th Long by the 78 31st E

Remarks on Box as Ship Master

Chicago 18th October 1858

SAW A BRIG
&
SHIP

Began with strong breeze from the S
having E & E and on all sail at 6 P M on
first of my top sail I hauled to the wind hauled
to the 1st & 2nd the wind at 11 AM & then the
moving a full ship under close reef top sail
thick with squalls of rain saw a ship
being moving the

Lat 38 50 N

Tuesday
19th

Began with a moderate gale from the S
having to the 1st & 2nd on fore & main
sails & 3rd to under close reef main
top sail of stay sail the wind shifted to the S
later at the fore sail

Lat 38 20 N Long 78 26 W

Wednesday
20th

SAW A BRIG
&
SHIP

Began with a gale from the S the ship
under close reef top sail steering about by the N
at 8 P M saw a Brig of Ship steering to the S
at 8 P M under the 1st of 1st moderate breeze
the 1st & 2nd the wind shifted to the S
the 1st & 2nd the main top sail under
close reef top sail

Lat 36 33 N

Thursday
21st

Began with no gale from the S at 2 P M
saw the ship to under close reef main top sail
of stay sail heading to the S at 7 P M on
fore sail middle & main moderate breeze
sail at 8 o'clock under all sail wind from the
S heading to the S by the wind indicator

Lat 35 43 N Long 78 15 W

Remarks on Board Ship Martha

Monday 24th 1838

Monday
23rd

Begins with strong breeze from the N. steering to the S. by the wind same a few back made of latter the same employed in repairing sails
Let 1000 lbs of gunpowder

Begins with strong breeze from the N. the ship under double reefed sails heading to the S. by the wind at 11 P. M. started ship to the N. under one sail & under all sail heading N. by S. arrived from the N. at 11 P. M.

Lat 33-51 S

Tuesday
24th

Begins with strong breeze from the N. the ship heading to the N. at 11 P. M. the same latter under at 8 A. M. the wind shifted to the S. E. steering to the N. thick of rain.

Long by the 760.7

Wednesday
25th

Begins with moderate breeze from the S. steering to the N. under all sail latter employed in repairing the fore & mainmast & the fore & mainmast from the S. E. steering to the N. by the 760.7

Lat 34-37 S

Thursday
26th

Begins with moderate breeze from the S. steering to the N. by the 760.7 latter under all sail & the fore & mainmast from the S. E. steering to the N. by the 760.7

Lat 35-00 S

Remarks on Board ship Martha
Saturday October 27th 1838

Begins with a gale from the E. & E. S. W. at 12 M. soon ship goes to under close reef main top sail & staysails at 4 P. M. the wind shifts to the S. at day light more moderate at 2 o'clock reef top sails staving 4 M by the

Lat 35-45 Long by Chron 70-26 E

Sunday
28th

SAW BLACK

FISH

Begins with brisk breeze from the E. staving 4 M by the sun black fish lowered after ten but did not take staving to the S. by 4 and on all sail

at 360 S. E

Monday
29th

Begins with fine & pleasant weather wind from the N. E. at sun set double reef the top sails at 3 A. M. in fore & stay in top sails better going to wind from the N. blowing heavy thick weather

at 360 S. E

Tuesday
30th

Begins with moderate wind from the N. ship under close reef main top sail & fore sail & staysails heading S. by E the wind shifted to N. E. staving 4 M by the N. raining & thick latter the same

at 360 S. E

Remarks on our Ship's Weather

Wednesday November 15th

SAW WHALES

Began with misty weather at 12 M got
the whale along side at 1 P M. fired 4 or 5 times
the 8 lb. gun, heading to the S. The weather fine on the
16th that 1 P M commenced loading 4 or 5 men
brought for whale but did not strike any
but 3 or 4 lb. long by the 16th

SAW WHALES

Thursday 17th
Began with strong breeze ship under double
reef top sails wind from the N. N. W. heading to
the S. by the point at 10 M. landed but did not
strike or sun set shorter it with 1 lb. gun
for whale & struck

Friday 18th

Began with strong breeze from the N. N. W.
ship under top sails & stayed heading to the S.
The middle finished loading storing down
oil in the after hold especially

SAW WHALES

Saturday 19th
Began with strong breeze from the N. N. W.
heading to the N. W. the point at 10 M. finished
storing down at 12 noon ship at 1 P M. landed
whales at 1 P M. & struck at 12 struck at 12 got
the whale along side
but 2 or 3 lb. long

Remarks Board Ship Weather

Sunday November 10th 1838

SAW 4 SEAL
WHALES

Began with moderate breeze from the N. at 4 A.M. set the sails & passed along side of the ship at 4 P.M. hauled but did not strike. At 11 P.M. in sight to seaward the ship standing to the N. at 2 A.M. was the ship at 4 P.M. for 1/2 of the night weather.

Monday

SAW WHALES

Began with fine & pleasant wind. At 10 P.M. broke off the lower of whale at 12 M. gave up the chase some time later. At 1 P.M. the ship at 1 P.M. was the whale at 1 P.M. struck it & took the whale along side at 12 finished with it.

Tuesday
SAW 4 SEAL
WHALES

Began with fine & pleasant weather wind from the N. at 1 P.M. commenced boiling at 4 P.M. for whale struck & finished some time later. At 10 P.M. the ship hauled to the N. at 1 P.M. hauled.

Wednesday
SAW WHALES

Began with moderate breeze from the N. at 1 P.M. some whales lowered after them struck with the ship at 10 P.M. got the cow along side. At 11 P.M. from the N. at 4 P.M. the ship parted from the ship at 7 P.M. at 11 P.M. at 11 P.M. weather.

Remarks on Board Ship "The"

Friday November 23rd 1854

SAW WHALES

Began with fine & pleasant weather wind from the N. at 10 AM to the N.E. at 5 P.M. for some sailing rather employed in chasing down and whales caught but did not strike having to the to run from the N.E.

Lat 33 45 Long by Chron 16

Saturday 24th

Began with fine & pleasant weather wind from the N.E. at 10 AM to the N.E. at 5 P.M. for some sailing rather employed in chasing down and whales caught but did not strike having to the to run from the N.E.

SAW WHALES

Lat 33 20

Sunday 25th

Began with fine & pleasant weather wind from the N.E. at 10 AM to the N.E. at 5 P.M. for some sailing rather employed in chasing down and whales caught but did not strike having to the to run from the N.E.

SAW WHALES

Lat 32 55

Monday 26th

Began with fine & pleasant weather wind from the N.E. at 10 AM to the N.E. at 5 P.M. for some sailing rather employed in chasing down and whales caught but did not strike having to the to run from the N.E.

SAW WHALES

Lat 32 30 Long by Chron 16

Thompson's 3rd Board Ship Montha
 Tuesday 24th of November 1838

SAW WHALES

SHIP

Began with fine & pleasant weather the wind
 from the N. employed in cutting at 10 AM finished
 hauled for whale & struck at 12 PM got down the
 side made a float & in boiling time at 1 PM
 were out cutting at 10 finished hauling from
 the N. having to the 15th at 11 saw 2 seals
 Lat 32 30 S

SPOKE THE

ALBION

Began with moderate breeze from the N. & wind
 employed in hauling to the N. at 1 PM
 hauled the ship down. Made a float & in boiling
 hauled having to the N. & strong breeze from the N.
 Lat 33 30 S Long by Chron 70 15 E

Thursday
 25th

Began with strong breeze from the N. & wind
 to the N. & by the wind employed in stowing
 down & hauling at 1 PM the wind from the N. &
 with rain & the stowing down the ship down wind
 Lat 33 41 S

Friday
 26th

Began with strong breeze from the N. & the wind
 the wind short with freshened stowing down
 the ship down from the N. & the ship down
 sightly & in repainting about half past 10
 saw four seals
 Lat 33 41 S

SAW FINE EAGLES

*Remains with light breeze from the S.W. during
 Saturday December 1st 1848*

SAW A SHIP

Begins with light breeze from the S.W. during
 the day the wind moderates about dusk at 10 o'clock
 whales put in but not fasten at 12 o'clock on light
 to be made out at 10 o'clock at 10 o'clock at 10 o'clock
 of pleasure employed in clearing up the fishing
 party of four weeks in water

FIVE BACKS

Sunday
 2nd

SPORKE THE

ALBION

Lat 50-50 S long by the 7th N.E.
 Begins with moderate breeze from the S.W.
 bearing in the day the wind moderates to the
 north at 10 o'clock at 10 o'clock the action
 rather strong & of four of pleasure at
 Lat 50 50 S

Monday
 3rd

(Hawking the first
 day
 fine & sunny)

SPORKE THE

LIVERPOOL

Begins with fine pleasant weather wind
 from the S.W. steering S.E. Middle bearing to the
 S.W. Don about west at 10 o'clock on water
 second wind from the S.W. bearing to the S.W. at 10 o'clock
 the Liverpool of R. B. B. left Thomas a month
 out yet

Tuesday
 4th

SAW WHALES

2 SHIPS

Lat 50-50 S long by the 7th N.E.
 Begins with fine & pleasant weather on
 the with the Liverpool wind from the S.W. the
 steering S.E. and on the water at 10 o'clock
 toward after them but did not fasten upon
 2 ships to leave
 Lat 50 50 S

From the Boatswain's Mate
 Sunday 5th October 1838

SAW SHIPS
 &
 WHALES

Began with strong breeze from the N.W.
 at 1 P.M. in evening for whale's track but no
 luck was made. Saw the Captain's boat
 just to a whale stove all 3 boats the Liverpool
 lowered her boats & struck & saved the whale.
 lowered our boats to assist the B. delays four
 on board. Latter saw whales twice but did not
 follow & take the American's boats of Ch. B. Dyer.

Set 50 fathoms by the 12-10 &

Thursday
 6th

SAW WHALES

SAW SHIPS

Began with moderate breeze from the N.W.
 leading to the N at 1 P.M. saw whale however
 I struck at 1 P.M. took the whale along side
 thick foggy. Later the same day I saw
 plenty of whales in sight at 11 & lowered
 I struck at 12 took the whale along side & saved
 in night pleasant weather

Ch. Obs

Friday
 7th

SAW A SHIP

Began with light breeze from the N.W. at
 1 P.M. commenced setting at 1 P.M. for
 saw the American cutter Midway
 at 10 fathoms. I saw at 10 fathoms
 ship in the fog thick fog employed in
 sailing

Set 30-05

Remarks on Board Ship Weather

Sunday Decr 15th 1845

Began with strong breeze from the N. heading
to the S. by the wind Middle then came a
fine & pleasant wind from the S. by the wind

Lat 31-45 Long by the 72-40 E

SAW BLACK

FISH

Began with fine & pleasant weather wind
from the S. by the wind then came a
fine & pleasant wind from the S. by the wind
at 12 light breeze wind heading to the S.
and black fish were seen & fine & pleasant

Lat 32-00 E

SAW

PINDAORS

Began with light breeze & pleasant weather
wind from the S. by the wind then came a
fine & pleasant wind from the S. by the wind
sails were for back

Lat 32-15 Long by the 72-00 E

Monday
19th

Began with fine & pleasant weather wind
from the N. by the wind then came a
fine & pleasant wind from the S. by the wind
employment in getting ready

Lat 32-20 Long by the 73-00 E

SAW A SHIP

Began with light breeze from the N. by the wind
at 12 light breeze wind heading to the S.
and under all sail at 12 light breeze wind heading to the S.
saw at 10 a m a ship with black & white sails

Lat 32-45 E

Tuesday
21st

Began with light breeze from the N. by the wind
at 12 light breeze wind heading to the S.
the light & sails & sails

Lat 32-45 Long by the 73-15 E

Remarks on Board Ship Martha
Sunday December 22 - 1838

Began with moderate ship under all
sails steering N by W Middle Weather the same
at day in ship duty

Lat 35.04 Long by the 60-17

Sunday
23rd

Began with fine & pleasant weather steering
N by W under all sail Middle Weather the same
at day in ship duty

Lat 36 12 S

Monday
24th

Began with light breeze steering N by W fine
& pleasant weather Middle Weather the same
at day in ship duty

Lat 36

Tuesday
25th

Began with light breeze Middle Weather the same
at day in ship duty steering N by W by the
wind in ship duty

Lat 36-08 Long by the 63-13 E

Wednesday
26th

Began with strong breeze heading N by W by
the Middle Weather the same at day in ship duty

Lat 36-22 Long by the 60-17 E

Thursday
27th

Began with strong breeze from the N by W
at 11 AM double reefed the top sails
Under the fine & pleasant ship under all
sails steering N by W

Lat 36-32 Long by the 60-17

Remarks on Board Ship Martha
Sunday June 1st 1799

CAME TO
ANCHOR

Began with brisk breeze at 3 P M came to anchor at 4 M in 15 fathoms water. The light squalls of rain better the people on liberty. About 4 P M all hands returned on several canoes from the shore with great fine & pleasant wind from the N E

Monday
2nd

Began with fine & pleasant weather the people on liberty at 4 P M returned on board to be employed in getting water off fine weather but very warm

Tuesday
3rd

Began with fine & pleasant weather wind from the S W in the middle of the day light breeze employed in blacking the bents & side

Wednesday
4th

Began with fine & pleasant weather wind from the S W employed in getting water off fine weather & latter raining with the wind from the S W

Thursday
5th

Began with squally weather with wind from the S W in the middle of the day the same employed in blacking the bents & getting down water

Remains on Board Ship

Friday January 11th 1834

Began with light breeze & variable winds
with squalls of rain. Made the same full
provision from the shore & employed in getting
water from the shore got a bullock off

Saturday
12th

Began with fine pleasant weather. Made
a further voyage with variable winds got 3 bags
a few potatoes & onions from the shore.

Sunday
13th

Began with light winds & variable with our
part of the ship weighing one side by 5 minutes
did not return at 5 a.m. got under weigh. Letter
the Capt left the ship with a boat crew for the
Port reaching the ship off between Pora Pora
& St. Marys to the wind from the S.W. & fresh.

Monday
14th

Began with light winds & variable at 10 a.m.
1 of the men returned & reported the other men
were waiting for a boat at 6 a.m. the Capt
proceeded on board. Made the same anchorage
in 15 fathoms water between St. Marys &
St. Marys at 6 a.m. weighed anchor with the
wind from the S.W. & fresh & squalls of rain.

Remains on Board Ship Martha

January 20th 1834

Monday

Began with moderate breeze from the E. strong at 1 P.M. continued to blow at 5 am. finished being blowing to the N.E. by the noon.

Set 22-000

Began with light breeze from the N.E. but soon to be in the E. greatly with rain hearing to be by the wind which short and calm during the wind from the E. thick & rainy.

Set 1500

Tuesday

Began with strong breeze from the E. strong to 4 P.M. then the 1st of Madagascar (the island on which) sailing at 8 P.M. saw a large whale however the boat greatly weathered out of the whale the sea was right thick & squally.

Set 100

Wednesday

Began with strong breeze from the N.E. but soon to be in the E. and the wind to be in the E. at 10 am. continued to blow at 10 am. at 20 miles.

Set 2600.

THE LAND
IN SIGHT

Began with light breeze from the E. strong to 4 P.M. then the 1st of Madagascar (the island on which) sailing at 8 P.M. saw a large whale however the boat greatly weathered out of the whale the sea was right thick & squally.

Remarks on Bone Ship 4 or 5 miles

Friday January 24th 1884

Began with a moderate breeze from the N. blowing
with the land on sight 40 miles & at 10 miles
also with squalls of rain. Latter part of day
at 40-50

Saturday
25th

Light breeze from the N. blowing
to the SE by the wind the breeze began to wear
short & I went to the light and back the
land from the N. blowing at 5
at 15-20

Sunday
27th

Began with a moderate breeze from the N. the
morning & at 10 the breeze squalls of rain & rain
shortened but the breeze was with strong
squalls of rain the land was in sight
and squalls

Monday
28th

Began with a strong breeze & squalls of rain
with heavy squalls of rain & squalls from
the N. blowing at 5 and with squalls of rain
and at 10 the breeze was with squalls of rain
at 15-20

Tuesday
29th

Began with a moderate breeze from the N. the
morning to the N. & the land was in sight. Middle
of the day the
at 20-30

THE LAND
IN SIGHT

Feb. 20th 1829

21-171

LAW, SUPPLY

WILLIS

542

Remains on B and Chap. Smith
 Monday February 10th 1829

Begins with moderate breeze from the N.E.
 steering S at 11 minutes past 1 P.M.

Out of a group which is at the 1st of the morning
 a nation of the 1st of St. Michaels Middle arrived
 to the 1st of the morning at 12 M. having
 been latter steering N.E.

Lat 24 50 Long by the 49 40

Friday
 11th

Begins with fresh breeze from the N.E. steering
 S. the arrival set by the 1st of the morning at the
 1st of the morning at 12 M. having
 been latter steering N.E.

Lat 25 00 Long by the 49 30

Saturday
 12th

Begins with moderate breeze from the N.E. steering
 to the 1st of the morning at 12 M. having
 been latter steering N.E.

Lat 25 10 Long by the 49 20

Sunday
 13th

Begins with fresh breeze from the N.E. steering
 from the 1st of the morning at 12 M. having
 been latter steering N.E.

Lat 25 20

SAW THE

15th OF

MADAGASCAR

Remarks on Board Ship *the Endeavour*
 Tuesday February 19th 1794

Begins with a breeze from the S
 heading to the N by the wind & rain & clouds
 very low. Much storming & the rain is
 short and rather heavy to the N by the wind

Lat 29-40 Long by the 22-40 E

However Begins with a breeze from the S
 from the S heading to the N by the wind & rain
 at 10 o'clock the wind had S by E & the rain heading S

Lat 28-40 Long by the 22-40 E

Begins with a breeze from the S
 heading to the N by the wind & rain & clouds
 rather at 10 o'clock the wind had S by E & the rain heading S

at 10 o'clock the wind

Lat 28-40 Long by the 22-40 E

Begins with a breeze from the S heading
 at 10 o'clock the wind had S by E & the rain heading S
 of N B for 20 days & the ship Endeavour
 latter heading to the S by E with the
 breeze

Lat 28-40

Begins with a breeze from the S heading
 at 10 o'clock the wind had S by E & the rain heading S
 latter the same with the breeze

Lat 28-40

W.A. SHIP

SPORE THE

ENDEAVOUR

February 23

P. M. on Board Ship Martin
 Sunday February 24th 1838

Began with thick snow high water
 went to night of rain but in the P.M.
 fell a quantity of snow wind of sea
 moderate to strong. Wind thickening
 the timber was in sight to the westward
 at 10

Monday
 25th

SAW A. BARQUE

Began with strong breeze from the N.E.
 with rain falling to the S.W. at 8 o'clock
 wind to the N. & the weather to the S.W.
 the sun came out at 10 o'clock and
 at 12 o'clock the sun came out to the S.W.
 and then with rain

at 4

Tuesday
 26th

SAW. PLCA

PTSB. A. BARQUE

SPERM. WHALES

Began with light breeze from the N.E.
 thick fog. The sun came out at 10 o'clock
 and at 12 o'clock the sun came out to the S.W.
 and then with rain
 Began with light breeze from the N.E.
 thick fog. The sun came out at 10 o'clock
 and at 12 o'clock the sun came out to the S.W.
 and then with rain

Wednesday
 27th

SAW SPERMI

WHALES

Began with light breeze from the N.E.
 thick fog. The sun came out at 10 o'clock
 and at 12 o'clock the sun came out to the S.W.
 and then with rain
 Began with light breeze from the N.E.
 thick fog. The sun came out at 10 o'clock
 and at 12 o'clock the sun came out to the S.W.
 and then with rain

Remains on Board Ship March
Friday March 10th 1854

Begins with fine & pleasant weather
wind from the N. by E. & S. by E. 10
miles per hour at the barometer 30.0
& clear all night

Lat 25-45

Saturday
11th

Begins with fine & pleasant weather, wind
from the N. by E. & S. by E. 10 miles
per hour at the barometer 30.0
& clear all night

Lat 25-00 Long by the 25-15

Sunday
12th

Begins with fine & pleasant weather
wind from the N. by E. & S. by E. 10 miles
per hour at the barometer 30.0
& clear all night

Lat 25-00 Long by the 25-15

Monday
13th

Begins with heavy breeze from the N. by E. heading
to the E. by the wind 10 miles per hour at the barometer 30.0
& clear all night

Lat 26-45

Tuesday
14th

Begins with fine & pleasant weather
wind from the N. by E. heading to the E. by the wind 10 miles
per hour at the barometer 30.0
& clear all night

Lat 26-45

Remarks on Board Ship Martha
Wednesday March 20th 1839

Began with light variable winds
with squalls of rain at 1 P.M. squall from
the S.E. changing to the N.W. then wind from
the N.W. to S.W. & the S.W. to N.

Lat 20 41 N Long 151 49 W

Thursday
21st

SAWA BRIA
SHIP

Began with moderate breeze from the
N.W. changing to the S.W. by the wind at sun
set shifted ship shorted sail & then heading
to the S.W. & S.W. by S. then to the N.

Lat 20 25 N Long 151 50 W

Friday
22nd

Began with fine pleasant weather wind
from the S.W. to S.W. by the S.W. then to the N.
fine pleasant weather

Lat 20 02 N Long 151 42 W

Saturday
23rd

Began with fine pleasant weather wind
from the S.W. heading to the N. by the wind
at sun set shortened sail & then heading
to the N. & S.W. all night

Lat 20 26 N

Sunday
24th

SAWA SHIP
LAND

Began with fine pleasant weather steering
N.W. wind from the E. shifted to the S.W. then
steering to the S.W. & S.W. by S. then to the S.W. by
S.W. at 9 A.M. saw the land
Lat 20 26 N

Remarks on Board Ship master

Monday, March 28th 1832

Begins with rain the wind squalls
of rain wind to the same latter and
juggles the ship by the head in sight

Lat 46-11 Long by 47-34

Begins with strong breeze with squalls of
rain during the N.E. at 4 P.M. till 8 P.M.
the ship makes sailing to the S.E. in more
ship to the N.E. strong breeze strong breeze ship
now double reef by sails employed in view
the current

Lat 46-11 Long by 47-34

Begins with strong breeze from the S.E. sailing
to the N.E. and the same at 12 o'clock the
Electra of London is in the west 11000 ft

Lat 46-11

Begins with strong breeze from the S.E.
to with the Electra in the head sailing to the
S.E. to the N.E. current double reef topsails
the Electra is right to windward employed
in making of an gun on

Lat 46-11 Long by 47-34

Wednesday
28th
SPOKE THE
ELECTRA

Thursday
28th

Resurrection Bay Ship Journal
 Sunday, March 29th 1839

Boys with strong breezes from the ESE
 ship under double reef top sails heading to
 the N by E at 12 M. Under the S at 12. Tacked
 to the N by E under the same under double
 reef top sails.

Saturday
 31

FROM THE
 FAVORITE

Lat 26-43 Long by the 48-00 E
 Boys with strong breezes from the E
 heading to the N by E. The wind at 12 M
 spoke to Barrow. Tacked off to the N
 under the S at 12. Made a head way to the
 N by E under the same breeze in sight
 which under double reef top sails.

Sunday
 1st

Lat 27-18 Long by the 48-31 E
 Boys with strong breezes from the E head
 way to the N by E under double reef top sails
 Made a head way to the N by E under the
 S at 12. Tacked off to the N by E under the
 same breeze in sight.

Monday
 2nd
 1839

Lat 27-50 Long by the 49-05 E
 Boys with moderate breeze from the
 E steering to the N by E. set shortened sails
 Made a head way - under the same steering to the N
 Lat 29 out

Remarks on Board Ship *Thetis*
 Thursday April 11th 1850

SAW SEVERAL
 SHIPS

Began with strong breeze from the S. weather
 at 2 P.M. spoke the *Edinburgh* at 4 P.M. bearing
 S. by E. at 2 1/2 m. noon ship S. by E. to the
 windward & from the S. by E. to the windward
 Lat 42 21

SPoke THE
 PLEIADES

Began with strong breeze & weather
 at 2 P.M. spoke the *Edinburgh* at 4 P.M. bearing
 S. by E. at 2 1/2 m. noon ship S. by E. to the
 windward & from the S. by E. to the windward
 Lat 44 31

SPOKE THE
 JOHN

Began with strong breeze from the S. weather
 at 2 P.M. spoke the *Edinburgh* at 4 P.M. bearing
 S. by E. at 2 1/2 m. noon ship S. by E. to the
 windward & from the S. by E. to the windward
 Lat 46 30

Friday
 14th

Began with strong breeze from the S. weather
 at 2 P.M. spoke the *Edinburgh* at 4 P.M. bearing
 S. by E. at 2 1/2 m. noon ship S. by E. to the
 windward & from the S. by E. to the windward
 Lat 46 18

Monday
 15th

SAW SPERM
 WHALES

Began with brisk breeze bearing to the S. by
 the wind Middle the same at 6 a.m. weather S.
 windward latter beating to windward in hall of
 whales in Co. with the *Pindus*
 Lat 46 20 Long 247 30

Remained on board ship Martin
 Tuesday 17th Dec 1834

SAW SEVERAL

WHALES

SAW A

SHIP

Began with fresh breeze from the E & the
 wind rose & we lay to with the top
 sail & a piece of whale in sight to windward
 at 10 in view by the E. Latter heading the
 same breeze & it was at the 10 employed
 in preparing fore top sail

Wednesday
 18th

Lat 47⁰⁰ N. Long by the 40-50 E
 Began with strong breeze from the E & heading
 to the N of N in the night the wind rose & we were
 with the breeze) lightning wind shifted to the N
 & then steering to the E under all sail equally
 at 10.50 P. Long by the 40-50 E

Thursday
 19th

Began with moderate breeze from the N & the
 wind rose & we were at double reef the top
 sails & then steering to the N & under the Red Sea

Friday
 20th

Lat 48-50⁰⁰ Long by the 40-50 E
 Began with fine pleasant weather steering
 to the N & the wind rose & we were at double
 reef the top sails & then steering to the N & under
 the Red Sea

Saturday
 21st

Lat 49-00⁰⁰
 Began with fine weather wind from the N & the
 wind rose & we were at double reef the top
 sails & then steering to the N & under the Red Sea
 at 10.50 P. Long by the 40-50 E

Lat 49-00⁰⁰ Long by the 40-50 E

Don't take in the breeze this morning

Monday April 21st 1827

Began with a strong breeze from the S.W. and a
heavy rain. The wind shifted to the S. by 10 o'clock
and the rain continued until 4 o'clock
when it cleared away.

Monday
21st

Began with a strong breeze from the S.W. and a
heavy rain. The wind shifted to the S. by 10 o'clock
and the rain continued until 4 o'clock
when it cleared away.

ations

Tuesday
22nd

Began with fine & pleasant weather and a breeze
from the S.W. shifting to the S. by 10 o'clock. The rain
continued until 4 o'clock when it cleared away.

if
ing
So.

Wednesday
23rd

Began with fine & pleasant weather and a breeze
from the S.W. shifting to the S. by 10 o'clock. The rain
continued until 4 o'clock when it cleared away.

Thursday
24th

Began with a strong breeze from the S.W. and a
heavy rain. The wind shifted to the S. by 10 o'clock
and the rain continued until 4 o'clock when it cleared away.

Let 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Remarks on Board of the North
 "Hawkeye" April 28th 53

Began with light breeze from the S.E. at 11 AM but the wind set in to the heavy squalls of wind & rain which lasted till 1 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again. The ship was then ordered to anchor at 2 PM. The wind then set in to the heavy squalls of wind & rain which lasted till 4 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again.

Lat 17 30 N Long by the 14 50 E

Wednesday
 27th

Began with strong breeze from the S.E. at 11 AM but the wind set in to the heavy squalls of wind & rain which lasted till 1 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again. The ship was then ordered to anchor at 2 PM. The wind then set in to the heavy squalls of wind & rain which lasted till 4 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again.

Lat 16 25 N Long by the 14 50 E

Thursday
 28th

SAW A. H. B. G.

W. H. A. L. D. S.

Began with strong breeze from the S.E. at 11 AM but the wind set in to the heavy squalls of wind & rain which lasted till 1 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again. The ship was then ordered to anchor at 2 PM. The wind then set in to the heavy squalls of wind & rain which lasted till 4 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again.

Lat 16 20 N

Friday
 29th

Began with strong breeze from the S.E. at 11 AM but the wind set in to the heavy squalls of wind & rain which lasted till 1 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again. The ship was then ordered to anchor at 2 PM. The wind then set in to the heavy squalls of wind & rain which lasted till 4 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again.

Lat 16 20 N Long by the 14 50 E

Saturday
 30th

Began with strong breeze from the S.E. at 11 AM but the wind set in to the heavy squalls of wind & rain which lasted till 1 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again. The ship was then ordered to anchor at 2 PM. The wind then set in to the heavy squalls of wind & rain which lasted till 4 PM when the rain cleared away & the wind dropped to the light breeze from the S.E. again.

Lat 16 10 N Long by the 14 50 E

Remarks on Board Ship Marion
May 1st Wednesday 1869

Begins with strong breeze from the S.W.
heading to the N.E. at 2 P.M. ship to the
S.W. Middle squally latter the same on Co
with the P. Dues

Lat 14-12

Thursday
Begins with brisk breeze from the S.W. heading
to the N.E. Middle squally latter the same on Co
Double reef top sail

Lat 16-51 Long by Chron 80-00 E

Friday
Begins with brisk breeze from the S.W.
heading to the S. on Co squally latter the
fine & pleasant weather all sail in Co with
the P. Dues

Lat 18-00 Long by Chron 80-00 E

Saturday
Begins with strong breeze from the S.W. ship
under all sail at 6 P.M. tacked to the N.E. & shortened
D sail latter heading to the S.W. under all sail

Lat 18-00 Long by Chron 80-00 E

Sunday
Begins with moderate breeze from the S.
heading to the S.W. at noon set shortland sail.
Latter steering N by E under all sail fine & pleasant

Lat 17-15 Long by Chron 80-00 E

Remarks in the Gulf of Mexico
Sunday May 12th 1844

CORRETO
ANCHOR

Begins with strong current running to
the S with light & variable winds at 2 P.M.
come to anchor calm in the passage between
St. Mary's & Madagascar at 2 P.M. in moderate
breeze with a light breeze from the S.W. latter
being the ship to be underway with the boats
the Pioneer boat assisting us

Monday
13th

CORRETO
ANCHOR

Begins with calm at 1 P.M. when we
at the S of St. Mary's & Madagascar
latter sent a raft of cork on shore for water at
the Pioneer own to water light house from the S.

Tuesday
14th

Begins with light breezes from the S & E latter
people on shore after water & wood fine weather

Wednesday
15th

Begins with light breezes from the S got a raft
of water off latter employed in stowing water

Thursday
16th

Begins with moderate breeze from the S & E
in stowing water at 7 A.M. weighed & anchored
Point Point Lance at the S of Madagascar

Remains on Board Ship March
Friday May 17th 1849.

- Monday
1st Breeze with light breeze from the S. by E. blowing
up to port & down to starboard.
- Tuesday
2nd Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore mountain
first breeze of wind of variable
wind at 11 A.M. came to anchor in 10 fathoms.
- Wednesday
3rd Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore
rather fresh on shore.
- Thursday
4th Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore
rather fresh on shore.
- Friday
5th Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore
rather fresh on shore.
- Saturday
6th Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore
rather fresh on shore.
- Sunday
7th Breeze with light breeze from the S. by E. blowing
up to port & down to starboard from the shore
rather fresh on shore.

Remarks on Board Ship Martha

Monday June 1st 1802

Began with brisk breeze from the N. E. blowing to the S. E. by the wind at 10 o'clock to the E. & was backed to the S. E. in 3 with the S. by the wind blowing in backing out after sunset

Lat 24-27 Long by the sun 50-5

Tuesday
4th

SAW A

SHIP

Began with strong breeze from the N. E. blowing to the S. E. by the wind at 10 o'clock to the E. & was backed to the S. E. in 3 with the S. by the wind blowing in backing out after sunset

Lat 21-54 P

Wednesday
5th

Began with strong breeze from the E. & was backed to the S. E. in 3 with the S. by the wind blowing in backing out after sunset

Lat 23-47 Long by the sun 50-5

Thursday
6th

Began with brisk breeze from the E. & was backed to the S. E. in 3 with the S. by the wind blowing in backing out after sunset

Lat 25-49 Long by the sun 50-5

Friday
7th

Began with brisk breeze from the E. & was backed to the S. E. in 3 with the S. by the wind blowing in backing out after sunset

I. marks in the ship's log
 Schied, June 1839

SAW
 IRELAND

Began with a heavy gale from the S
 driving the landward most rapid manner
 I remained till 10 o'clock at 10 o'clock
 at 10 o'clock the force was at 10 o'clock the force
 of the wind was more off than at 10 o'clock the ship
 up to the land 10 miles but better steering was
 made - all well

Sat 11th

Sunday
 12th

Began with moderate breeze from the N.E.
 steering to the S along the N side of the island
 at 10 o'clock a heavy squall of wind & rain of
 the landward side Middle passage
 made all well till the evening when the
 E. wind drove the ship to the N.E.

Sat 13th

Monday
 14th
 COME TO
 ANCHOR

Began with calm at 10 o'clock breeze from the N.E.
 at 10 o'clock a small vessel in St. Nicholas Bay
 at 10 o'clock a small vessel in St. Nicholas Bay
 the same plenty of cargo along side with
 Citator, Quin, & other things

Tuesday
 15th

Began with light breeze from the N.E.
 vegetables on board Middle passage better light
 breeze from the N.E. plenty of water on board

Bowen to on Board Ship [unclear]
[unclear] [unclear]

Begins with moderate breeze from the N
Made calm at 5 p.m. got underway with
light breeze of the land employed a [unclear]
anchor of [unclear]

Lat 22 26 N

Thursday
11th

Begins with strong breeze from the N
hardening to the N at 12 M. Tacked on shore at 1 P.M.
back off Middle of after showing the [unclear]

Lat 22 45 N Long by the 21 15 E

Friday
12th

Begins with moderate breeze at 10 a.m.
Tall breeze at 12 noon Middle the same. After
steaming the [unclear] employed in [unclear] the [unclear]
at 5 P.M. by [unclear]

Lat 22 54 N Long by the 21 37 E

Saturday
13th

Begins with strong breeze from the N showing
N at 11 M. Middle the same. At 12 noon from the
N showing the [unclear] employed in [unclear] up [unclear]

Lat 21 32 N Long by the 21 41 E

Sunday
14th

Begins with light winds & pleasant weather
showing a [unclear] breeze from the N. [unclear]
at 12 noon Middle [unclear] better calm

Lat 21 50 N Long by the 21 54 E

Remarks on Board Ship Maria

Monday June 17th 1839

SAW
THE LAND

Began with light breezes from the N^W
at 10th the wind at 11th shifted to the
N^W & at 12th it shifted to the N^W & at 1st of June
we were some 14 miles off the coast of St. Sebastian's point
the wind strong & at 2nd wind from the N^W
at 3rd at 4th and 5 miles Dist

Lat 22 35

Wednesday
18th

Began with strong breezes from the S^W
steering N^W along the coast of Africa at 10th
off the N^W end of Fagaveta Is^l heading in under
Double reef to head blowing heavy from the
S^W at 7th we were off shore ship lying to
and in about 10th main top sail & stay sail & the
blowing heavy at 11th we were on shore breeze
At the N^W of our weather beam at Day light
15 miles Dist at Double reef to head at 11th we
saw a large island 10 fathoms water Dist 15 miles

Lat 21 30

Thursday
19th

CAME TO
ANCHOR

Began with strong gales from N^W at 11th
fore top sail heading to the N^W & Middle
sails with rain at 12th we were ship lying
near moderate wind from the S^W heading to the
N^W by the wind at 11th we came to anchor
in 10 fathoms water near the coast of Africa
Dist 8 miles Dist

Lat 21 30

Remarks on Bow in Ship's Direction
 Thursday 21st July 1839

Begins with fine weather wind from the
 N.E. middle the same latter strong breeze
 & wharves at daylight at 11.0 in the afternoon
 heat & over the ship of anchors the whole

Friday
 12th

Begins with strong breeze from the N.E. middle
 moderate latter turning the whole to the E. by N.

Saturday
 13th

Begins with moderate breeze of fine weather
 at 2.0 in get the whole along side of the
 E. by N. middle of latter wind from N.E. of E. pleasant
 look whaling

Sunday
 14th

Begins with fine & pleasant weather
 wind from the N.E. middle the same latter
 wind from the N.E.

Monday
 15th

Begins with moderate breeze from the
 N.E. middle of latter of moderate
 look whaling

Tuesday
 16th

Begins with moderate breeze from the
 N.E. middle of latter strong breeze from N.E.

Wednesday
 17th

Begins with strong breeze from the N.E.
 the whole the same latter wind from the N.E. look
 whaling

ations

ing
 10.

Remarks on British Ship Wreck.
Thursday Jan 18th 1830.

COAST GUARD
AUGUST

Begins with strong breeze from the NW
the Ship India of St Bedford left here 11
months ago 1900 W came in to the Bay but
did not stop employed in heaving up the
anchors to clear the chains & 6 or 8 made
sail & came to anchor near the Is in the middle
of the Bay in 7 fathoms water

Friday
19th

Begins with strong breeze from the S and
squalls of rain boats exhibiting painting ship

Saturday
20th

Begins calm but exhibiting Middle W in
rather the same painting ship light breeze from

Sunday
21st

Begins with light breeze from the S &
just meeting with the Pindus & last of
Pembroke Middle the same to then got the
anchor with 28 fathoms of chain from
the bottom that the India of St Bedford
passed from

Monday
22nd

Begins with light breeze from the S and
the same latter employed in brasting out oil
from the main hatchway & cooper

Remarks on Board Ship Martha
Monday July 21st 1849

Begins with fine pleasant weather
wind from the S employed in stowing sail
in the main hatchway found it in good order
later employed in stowing the after hatch way
the Pamproke left for sea

Tuesday
22nd

Begins with pleasant weather wind from
the S sent a soft main top gallant mast & yards
later to the whaling commenced making
with the Pamproke & Clifton

Wednesday
23rd

Begins with light breeze from the S of S
middle & Clifton the same boats whaling

Thursday
24th

Begins with calm & pleasant weather Middle
moderate gale from the S later employed in
in repairing sails

Friday
25th

Begins with moderate gale from the S Middle
the same later the Clifton & Pamproke left for sea

Saturday
26th

Begins with strong breeze from the S Middle
the same later the Clifton & Pamproke

Remarks on Board Ship Monitor
Monday July 29th 1839

To go on with moderate force from the
middle more to of rain latter get some
oil from the Powder that was taken out
water with her & found it warm

July
30th

To come with moderate force from the
middle of rain latter get some
oil from the Powder that was taken out
water with her & found it warm

August
1st

To go on with light breeze employed in
up rigging latter sent out a party

August
1st August

Begin with light breeze from the S of Center
the same carried on anchor on board the Bergen
Powder at 9 o'clock under weigh in Co with
the Bergen Powder from Bazaneta Bay

August
2nd

COME TO
ANCHOR

Begin with light breeze from the NE
berthing out of the bay at 6 o'clock come to
anchor with a head tide on 9 ft there water
at 8 o'clock under weigh in Co with the
Powder arrived from the NE

Monday
3rd

Begin with fine & pleasant weather wind
from the N blowing out of Bazaneta Bay
at 12 M shortened sail Middle parted & went
with the Powder later land in sight & coast
of Africa Lat 22-46

Remarks on Board Ship "The"

Monday August 14th 1839

COME
TO ANCHOR

Begins with light breeze from the N. & standing to at 6 P.M. we come to anchor in Delagoa Bay middle of the anchorage & anchor of anchored further to the S in 6 fathoms water. The Capt left the ship for English River boats from the shore with various letters for friends.

Tuesday
15th

Begins with light breeze from the N. & pleasant wind & Breeze standing out of the bay. Middle of the anchorage from the S. then from the N.

Wednesday
16th

Begins with light breeze, from the N. & pleasant. Letter sent on shore by boat with a piece of brown mule of the natives.

Thursday
17th

Begins with light breeze from the N. & middle the same letter sent.

Friday
18th

Begins with calm middle the same at 7 P.M. weighed anchor for the light breeze from the N.

Saturday
19th

Begins with light breeze from the E at noon set shortland sail. Letter sent on shore by boat. E breeze to the S. & employed in ship duty. Lat 20° 1' Long by the 33-00 E

Remarks on Breeze & High Water
Tuesday August 20th 1839

Begins with moderate breezes from the S
heading to the S by E by the wind middle breeze
from the S ship under close reef main
top sail latter moderate ship under close
reef topsail

Lat 26-31 Long by Chron 33-30

Wednesday
21st
SAW TAIL
LAND

Begins with moderate breezes from the S ship
heading to the S by E by the wind at noon set close
sail latter moderate from S by E heading to the S by E
under close reef at 4 P M saw the E Coast of Spain

Lat 26-41 Long by Chron 33-15 E

Thursday
22nd

Begins with light breezes from the S heading
to the S by E middle breeze latter the same employed
in ship's duty

Lat 26-41 Long by Chron 33-43 E

Friday
23rd

Begins with moderate breezes from the S
heading to the S by E by the wind at 6 P M, more
ship to the S middle breeze latter
moderate from the S by E heading to the S by E
at 11 P M saw a vessel off our lee quarter

Lat 26-41 Long by Chron 33-43 E

Saturday
24th

Begins with light breezes from the S
steering Port 6 P M spoke the Brig Quits of
Bedford Port 11 A M middle ship under close
sail latter light breeze ship under
close reef topsail, one far back

SPOKE

THE QUIT

Lat 27-11 S

Remarks on Board Ship. Weather Sailing Day Oct 20th 1834

THE
LAND

Boys with brisk breeze from the N. by E
steering that at 10:30 am the lead 3 fathoms off
the bottom of the ship at noon at 12:00
turned south steering by the bottom with breeze
from the S. E. steering with under all sail and
fine weather

Lat 28-13 N Long by the 29-11 E

Monday
26th

Boys with brisk breeze from the S. E. steering
at 10:30 am at 12:00 with moderate breeze
gale latter the same ship under double reef

Lat 30-43 N Long by the 32-08 E

Tuesday
27th

Boys with moderate breeze S. E. steering
at 10:30 am making squalls from the S. by E
all sail but lost reef under top sail Moderate
breeze gale latter more moderate from
ship to the S. under all sail from the S. by E

Lat 31-35 N Long by the 29-39 E

Wednesday
28th

Boys with moderate breeze from the S. by E
heaving to the S. under all sail Moderate breeze from
S. E. steering at 10:30 am under all sail with brisk breeze

Lat 32-00 N

Thursday
29th

Boys with brisk breeze from the S. by E steering
at 10:30 am under all sail Moderate breeze at
daylight under all sail the ship under double
reef top sails at 11:30 am at 12:00
to know steering at 10:30

Lat 34-25

SAW A
BARQUE

Remarks on Borneo Ship Masthead Friday August 10th 1839

CONE TO
ANCHOR

Left the anchorage from the S. by S. steering
off the anchorage the land is west of the
off the anchorage at 5 P.M. kept S. by S. until 7 P.M.
when I doubled the top sail at 12 P.M. & in
midnight at 11 P.M. we were anchor in Port
Pichette in 7 fathoms water.

Sat
11

Began with light breeze from the S. by S.
employed in getting water from the shore
foggy till the sun set a light of water
on shore.

Sunday
1st
10th

Began with light breeze from the S. by S.
lighter light wind from the S. by S. the sun
shone on liberty.

Monday
2nd

Began with fine pleasant weather
wind from the S. by S. in the evening
steamed on board the ship moderate
lighter breeze from the S. by S. with
rain got up on the S. of water from the
shore at 11 A.M. let go the anchor.

Tuesday
3rd

Began with brisk breeze from the S. by S. with
heavy squalls of rain at 1 P.M. a few more
of water from the shore the weather on
shore.

Reminders on Board Ship
 The Indian September 6th 1829

Begins with calm weather, strong
 from the S. latter the same the boat from
 shore often the light breeze.

Thursday
 5th

Begins with strong breezes from the S. E.
 Middle moderate latter got over by other
 recruits from the shore.

Friday
 6th

Begins with strong breezes from the S. E. W.
 Middle moderate strong breeze &
 Allen J. G. Deserter from the ship at 7
 A.M. got the ship underweigh at 11 came to
 anchor waiting for the men.

Saturday
 7th

Begins with strong breezes from the S. E.
 Middle & latter the same at 6 A.M. have
 short strong breezes from the S. E. W.

Sunday
 8th

Begins with strong breezes from the S. E. W.
 at 2 P.M. weighed anchor at 4 P.M. abeth
 steering out of the Bay. Left put the
 mate of duty Middle lying off & on near
 the Bay latter blowing heavy in fore & 2
 topsails heading to the S. at 11 more ship

Lat 34 = 33

Remarks on Board Ship Month

Monday September 4th 1839

SAW THE
LAND

Begins with strong breeze from the S
blowing to the N by E in short gusts
at 10 in at 11 by N again by N
Middle moderate from the N by E
the N by E at 10 in the land in sight off
10 by ship under double reef topsails standing
in for port Elizabeth

Tuesday
11th

Begins with strong breeze from the N by E
ship under double reef top sail at 12 M came
to anchor in Port Elizabeth in 7 fathoms
master boat came from the shore with the anchor
that left on Friday at 11 M weighed anchor
for sea Middle light winds latter the same
with thick fog employed in getting in the
anchors & putting the boats

No Ob

Wednesday
12th

Begins with light breeze from the N by E head
ing N by the wind under double reef top
sails thick fog some black fish Middle of the
evening from the N at 10 in the wind shifted
to E by N in all sail except 1 close reef
main topsail thick & raining

No Ob

Thursday
13th
SAW A SHIP
LAND

Begins with strong breeze from the N by E
with main ship by N by the wind close reef
topsail Middle the same latter more moderate
moderate with some rain at 10 in the wind
shifted to E by N in all sail except 1 close reef
main topsail thick & raining

Remarks on Board Ship Martha

Tuesday September 18th 1838

SAWA

SHIT

Begins with calm & pleasant weather
moderate breeze from the N. by E
to the S by the wind later part of day
moderate breeze from the S by the
wind & by 10 in evening water was
but not

Wednesday
4th

Begins with strong breeze from the N. E
with rain heading to the S. E. Middle moderate
from the N. E. by 10 P. M. water from the
N. E. strong ship under way at 10 P. M.
on but the rain is still

Thursday
15th

Begins with moderate breeze from the N. E
wind from the N. E. moderate from the N. E. breeze
from the N. E. strong ship under way at 10 P. M.
at 10 P. M. Long 27-00

Friday
16th

Begins with brisk breeze from the N. E. & S. E.
double under the top sails Middle strong breeze
from the N. E. by 10 P. M. moderate from
at 10 P. M.

Saturday
17th

Begins with moderate breeze from the N. E
strong ship under way at 10 P. M. Middle thick with
rain ship under way at 10 P. M. water from the
from the N. E. ship under way at 10 P. M.
at 10 P. M. Long 27-00

Remarks on Board Ship
Monday Sept 19th 1859

Began with light breeze from the S. blowing S.W. under all sail made 6 miles of sea when wind from the S.W. ship under double reef to round head to the S by the wind

Lat 32-50

Thurs
19th

Began with strong breeze from the S.W. to the S.W. under double reef to round head to the S by the wind at 2 a.m. more ship to the S wind from the S.W. moderate gale ship under double reef to round head to the S by the wind

Lat 33-50

Friday
20th

SAW A SHIP

Began with a moderate gale from the S.W. under double reef to round head to the S by the wind from the S.W. latter the same ship under whole top sails from sea employed in ship's duty near a point

Lat 35-50

Saturday
21st

SAW A SHIP
&
BLACK WHALE

Began with fine & pleasant weather, wind from the S.W. ship under all sail there was a ship to windward bound to the S.W. middle pleasant latter a squall of rain at 11 a.m. saw a whale going fast to windward bound but did not strike

Lat 36-50

Remarks on Board Ship Martha
Tuesday October 1st 1834

Begins with moderate breezes from the N.E. & steering S.E. under double reef top sails making 4 miles of better light air from the N.W. rain of all the afternoon from near the shore

Lat 40 06

Wednesday

Begins with light breeze from the S.E. steering S.E. under double reef top sails making 4 miles of better light air from the N.W. making S.E. thick weather confined in ships wake

at 39 25

Thursday

Begins with moderate breezes from the N.E. steering S.E. at sun set luffed to the wind heading to the N.W. & middle thick & making at 3 o'clock thunder & lightning with rain close reefed main top sail & shortened the fore sail at 4 o'clock came to anchor from the N.W. with rain & heavy

No Obs

Friday 4th

Begins with moderate gale from the N.E. steering S.E. under close reefed main top sail & fore sail & fore sail at sun set shortened the fore sail & luffed to the wind heading to the N.W. & middle the wind from the N.W. at daylight made all sail & made S.E. fine & pleasant with moderate

Lat 40 33 Long by Chron 51 56

Saturday 5th

Begins with fine & pleasant weather made from the N.W. at sun set shortened sail at daylight made all sail & steering S.E. wind from the N.W.

Lat 39 15

Remarks on Board Ship *Porpoise*
 Sunday October 11th 1839

Begins with moderate breezes from the
 N with light squalls of rain Steers
 at sun set shortened sail Middle
 Latter brisk breezes & specially ship under
 Double reef top sails same fair back

Monday
 7th

Lat 37-01 Long by the 52-18 E
 Begins with strong breezes & squalls from the
 N steering N & E under double reef top sails at
 sun set shortened sail & heeled to the wind
 heading to the N by the wind at day light
 made all sail steering N & E same fair back

Tuesday
 8th

Lat 35-31 Long by the 53-20 E
 Begins with strong breezes from the N & E
 steering N & E under all sail at sun set shortened
 sail & wore ship steering S & E Middle the sun
 Latter moderate with thick weather wind
 from the N with light squalls of rain
 employed in setting up shooks & repairing fore
 stays & it same fair back

Wednesday
 9th

Lat 35-50
 Begins with fine & pleasant weather wind
 from the N steering N & E under all sail at
 sun set shortened sail Middle & Latter thick weather
 saw few back wind from the N & E steering N & E
 by E employed in setting up shooks

Lat 35-50 Long by the 55-20 E

Remarks on Board Ship *Arcturion*
 Thursday October 10th 1839

Begins with strong breezes from the S.W. stem
 S.W. under all sail at sun set shortened sail
 luffed to the wind to N.W. at day light made
 sail shortening S.W. wind from the S.W. employed
 in breasting out after mast & (sailed) that fog

Lat 36 = 24

Friday
 11th

Begins with thick & foggy weather moved
 from the S.W. steering S.W. at sun set shortened
 sail luffed to the wind head in to the N.W.
 Middle thick weather latter under double
 reef top sail at 10 a.m. move ship to the S.W.
 head

Saturday
 12th

Begins with brisk from the N.W. with sun
 steering S.W. in double reef top sails at noon
 shortened sail luffed to the wind heading to the
 N.W. Middle of latter steering heavy from the
 ship under cross reef main top sail & stay sail

Lat 36 = 25

Sunday
 13th

Begins with a gale from the N.W. ship by day
 to sun in short reef main top sail & stay sail
 Middle the weather moderate with squalls of
 hail latter steering S.W. under all sail move
 from the S.W. (sailed)

Lat 35 = 36 P.M. by Chron 258

Monday
 14th

Begins with moderate breezes from the S.W. steering
 S.W. at sun shortened sail & luffed to the wind heading
 to the N.W. Middle the same latter steering S.W. under
 all sail tight squalls of rain saw few birds

Lat 34 = 41 P.M. by Chron 206

at anchor in Sound Ship Martin
Tuesday October 15th 1839

Began with light breeze from the E
& pleasant steering at day & saw few birds
Wind to moderate within steering at day &
under all sail

Wednesday
16th

Lat 33-00 Long by the bar 61-10
Began with light breeze from the E
cloudy steering & to under all sail at
noon the wind employed in making of
noon the E & latter pleasant steering
& wind from the E

Thursday
17th

Lat 33-11 P
Began with light breeze from the E
to the S by E by the wind employed in making
over the whole bore saw few birds at sun
set shortened sail at 12 noon ship to the S by E
to the moderate breeze from the E to the S by E
to the S by E by the wind employed in making

Friday
18th

Lat 33-14 Long by the bar 61-51 E
Began with moderate breeze from the
steering & under all sail at sun
set double reefed the topsails at day light
made all sail employed in steering at day

Lat 33-46 Long by the bar 61-41 E

Remarks on Board Ship Weather
Monday August 1st 1849.

SAW
WHALES

Begins with moderate breeze from the SE at 11 AM
the barometer falls a whole along side at 1 PM
lowered & struck at 3 PM got the whole along side
middle blowing moderate to gale with rain & the
blowing a gale employed in cutting at 4 PM and
none ship heading to the SE under full sail
more top sail blowing heavy

At 10 PM

Tuesday
2nd

SAW
WHALES

Begins with light breeze weather at 11 AM
lowered for whales struck at 3 PM got the
whole middle by the whole at 6 AM
commenced cutting at 11 finished

At 10 PM

Wednesday
3rd

SAW A
SHIP
WHALES

Begins with fine weather from the SE at
11 AM struck a whole & killed them with a shot
& got the whole along side at 9 finished cutting
& commenced hoisting down a ship sailing to
wardward at 7 AM saw a ship ahead at 8 AM
saw ship to the SE wind from the E ship under
full sail towards our whaler

At 10 PM

Thursday
4th

Begins with with strong breeze from the SE
to the E under short sail employed in cutting middle
the same at 7 AM saw a whole lowered & struck at 9
got the whole long side commenced cutting at 11
from the SE at 12 PM

Remarks on Board Ship *Thetis* Friday 8th November 1839

SAW

WHALES

Breeze with strong breeze from the E employed in setting at 1 P M finished hauling down at 2 P M commenced hauling Middle heading to the S E and in some instances lowered but did not strike whales in sight

Lat 30 1/2 N

Saturday
9th

SAW

WHALES

Breeze with strong breeze from the E. and to the S E wind in variable way kept sails at 1 P M we ship to the S E whales in sight employed in hauling Middle heading to the S E the latter looking about in chase of whales a great number in sight lowered but did not strike

Lat 34 23 N

Sunday
10th

SAW

WHALES

Breeze with moderate breeze from the E. employed in hauling in chase of whales at 1 P M lowered at 4 P M lowered again but did not strike Middle heading to the S E at 6 P M saw whales lowered sailing land got up to chase at 10 AM finished hauling blowing heavy from the E going to under last and main spreaders

Monday
11th

Breeze with moderate gale from the ENE heading to the N middle the same with rain at 7 AM were ship to the S E employed in hauling down

Lat 34 34

Remarks on Board Ship in action
Tuesday November 12th 1859

SAW A.

SHIP

WHALES

Begins with a gale from the SE ship being
under last reef sails till well at 5 PM finished
stowing down Middle more moderate with
rain at 7 AM made all sail and saw a ship to
windward at 12 saw a whale to windward

Wednesday
13th

SPOKE

THE JOHN

PINDUS

SAW

WHALES

Lat 34-10^S Long by time 62-50^E
Begins with pleasant weather wind from the
NE at 1 PM spoke the ship John 2300 at 2 PM
lowered for whales but did not strike Middle
wind from the N heading heading to the NE
at 4 AM spoke the Breeze Pindus 1800
Perry 1000 lbs at 8 lowered for whales lowered
for whales struck at 9 got him along side
commenced cutting at 12 finished saw the John
to be a whale plenty of whale in sight

Lat 34-10^S Long by time 62-50^E

Thursday
14th

SAW 3

SHIPS

WHALES

Begins with fine & pleasant fine & clear
weather wind from the N in chase of whales at 1 PM
lowered & struck & sunk the whale at 1 PM lowered
& sunk another & parted the line at 6 PM put
up a dead whale 3 ships in sight Middle
begin by the whale better company in company
60 lbs

Remarks on Board Ship Monitor
Friday November 15th 1859

SAW
A
KITE

Began with strong breeze from the NE
ship under short sail heavy squalls of rain
Middle blowing a gale from the S & east by
at daylight more moderate commenced
boiling under short sail main topmast hauling
to the S & the same a Breeze to landward

Lat 36-23

Saturday
16th

SAW A
SHIP
&
WHALES

Began with strong breeze from the S & E
ship under short sail main topmast hauling
in boiling Middle moderate latter calm
at 6 AM saw whales lowered & struck on
ruined ship in sight boiling employed in
stowing down & boiling

Lat 33-57

Sunday
17th

SAW A SHIP
&
WHALES

Began with calm employed in boiling at
2 PM saw whales lowered & struck at 5 PM
got the whale alongside wind from the West
boiling at 10 AM commenced cutting plenty of
meat at 11 struck noon I saw ship
in sight to landward at 6 PM

Monday
18th

SAW 8 SHIP
&
WHALES

Began with fine & pleasant weather from the S & E
at 12 PM lowered & struck at 5 PM got the whale
Middle lying by the whale at 7 AM commenced
cutting at 10 PM commenced boiling ship in sight
& plenty of whales fine weather

Lat 34-00

Remarks on Board Ship the

Thursd'y November 27 1839

Begins with fine & pleasant weather
the heading to the S. E. under all sail
the weather at 7 A.M. same as before & of course
Latter employed in cutting

Lat 23.55 S

Thursd
28th

SPoke the

WASHINGTON

SAW WHALES

Begins with thick breeze from the S. employed in
cutting at 11 P.M. finished spoke the portland at 12 M.
looked for whales & about a great number in sight
at sun set got the whole along side Middle looking
laying by the whale at 7 A.M. commenced cutting
at 8 past blowing a gale from the S. E. spoke the
Washington commenced cutting ship going under
staysails at 8 past on account of the weather

Lat 21.00

Friday
29th

Begins with a gale from the S. E. heading to by the
whale & looking at 11 M. put back Middle
sailing with the same breeze thick weather
employed in boiling

Lat 18.00

Saturday
30th

Begins with moderate weather at 12 M. commenced
need cutting at 2 past & commenced looking
saw from the S. E. Middle moderate latter
the same heading to the S. E. under
topsails

Lat 34.00 S Long by the 65th E

Remarks on Board Ship Manthor
Sunday December 1st 1839

Began with moderate breeze from the S
steering Sot & employed in hauling Lutter having in
the S of the harbor short sail hooking some few boats

Lat 51 48

Monday
2nd

Began with fine & pleasant weather. wind
from the S at 1 P.M. finished hooking & commenced
steering down heading to the S by the wind then
steering down wind ship to the S

Lat 50 50

Tuesday
3rd

SAW

WHALES

Began with fine & pleasant weather wind from
the S steering to the S of the Middle of Lutter the
same as yesterday saw a whale lowered the boat but
did not strike whale young piece

Lat 51 22 Long by Chron 5 53 E

Wednesday
4th

SAW

WHALES

Began with fine & pleasant weather from the
S steering S at 1 P.M. saw a great number
of whales at 10 lowered & struck at & got him
along side Middle bying the whale to the cutting

Lat 52 20

Thursday
5th

SAW

WHALES

SPECKEL

BRECKE

Began with light breeze from the S heading to
the S of the harbor & in sailing at 1 P.M. spoke the
Barque Pembroke of London 1500 Middle
& Lutter pleasant heading to the S

Lat 53 30

Remarks on Board Ship Master

Friday December 1st 1839

Begins with calm sent aloft fore top of mast
yard & out flying jib boom at 4 P.M. fine
poising to the wind from the S.E. steering N.W.
under all sail fine & pleasant

Lat 33-18 S Long by the 65-18 E

Saturday
7th

Begins with fine & pleasant weather wind
from the S.E. steering N.W. Middle the same
Latter employed in stowing down sail

Lat 33-16 S

Sunday
8th

Begins with fine & pleasant weather employed
in stowing ship middle light breeze from
the S.E. steering N.W. Latter the same employed
employed in ~~stowing~~ ~~down~~ sending up light
sails fine & pleasant

Lat 32-10 S Long by the 64-44 E

Monday
9th

Begins with fine weather & light winds from
the N.W. heading to the N.E. by the wind Middle
& Latter calm employed in laying up muzzing

Lat 31-55 S Long by the 64-10 E

Tuesday
10th

Begins with calm Middle the same Latter light
breeze from the S.E. steering N.W. under all sail
employed in repairing S. boat

Lat 31-10 S Long by the 63-30 E

Remarks on Board Ship March
 Wednesday December 11th 1834

Begin with light breezes from the S.E.
 steering under all sail Middle squalls
 of rain Latter pleasant employed in business
 here Lat 30-00 Long by the 62-48 E

Thursday
 12th Begin with moderate breezes from the S.E.
 steering S of the wind all sail Middle light
 squalls of rain Latter light wind employed in
 carrying on shipping

Friday
 13th Lat 29-00 Long by the 62-00
 Breeze with light breezes from the S.E. steer-
 ing S.W. Middle calm Latter light breeze employed
 in packing cargo

Saturday
 14th Lat 28-00 Long by the 62-00
 Breeze with light breezes from the S.E. steer-
 ing S.W. employed in stowing cargo Middle
 shifted the stowage sails Latter calm employed
 in clearing ship

Sunday
 15th Lat 28-00 Long by the 60-00 E
 Breeze with on the Middle light breezes from
 the S.E. steering S.W. wind all sail S.W. on
 some rain at 10 long a whale 4 miles from the
 ship at 12 killed 2 boats

Lat 28-00

SAW 82, 83

WHALES

Remains on Board ship in the
Monday December 16th 1844

Began with light breeze from the S. E. but
on shore of wharves and in street, with light
breeze & long sea. The wind being very light the wharves
at 10 am commenced sailing from the shore.

Thursday
17th

Began with strong breeze from the S. E. but
the use of the wharves at 12th am commenced sailing from
at 12th at 12th am commenced sailing from the shore
breeze from the S. E. pleasant.

at 7-12th Long by the 12-14th

Friday
18th

Began with strong breeze from the S. E. but
at 12th at 12th am commenced sailing from the shore at 9 am from
looking out at starboard.

at 20-22th

Saturday
19th

Began with strong breeze from the S. E. but
at 12th at 12th am commenced sailing from the shore at 9 am from
looking out at starboard.

at 10th

Sunday
20th

Began with strong breeze from the S. E. but
at 12th at 12th am commenced sailing from the shore at 9 am from
looking out at starboard.

at 10th

Remarks on Board Ship Maudslayi
 Saturday December 21st 1839

Began with a light breeze from the E. ship under double reef top sails steering N. by E. with rain at 8 P. M. shifted to the windward and to the E. under short sail. Latter steering N. by E. employed in stowing sail.

Lat 40 30 Long by the 49 28

Monday
 22nd

Began with a light breeze from the E. ship steering N. by E. at short sail and to the E. under short sail. Latter steering N. by E.

Lat 41 10 Long by the 49 28

Tuesday
 23rd

Began with light breeze from the E. at short sail steering N. by E. Latter the ship under all sail and by 8 P. M. shifted to the E. under short sail.

Lat 41 00 Long by the 49 28

Wednesday
 24th

Began with fine & pleasant weather wind from the E. steering N. by E. under all sail at 8 P. M. from on which lowered the boat which

NEW SPERM

WHALES

going quick did not strike middle under short sail by the sound. Latter under all sail steering N. by E. at 4 P. M. on which

Lat 41 00

Journal of J. D. & J. H. Smith
 December 25th 1857

Began with fine & pleasant weather but
 in case of clouds at 4 p.m. some rain began
 falling. At 4.15 the sun came out & it continued
 off on a rather low & cold off at noon the
 sail made to fine & pleasant to the sun
 wind from the N.E. steering N.W. & under
 sail 13-40 by 4.17-45

Thursday
 26th

SAW SEVERAL
 WHALES

Began with fine & pleasant weather wind
 from the N.E. steering N.W. At 11 p.m. some
 whales breaching off wind. At 12 p.m. lifted the
 ship to the wind & made it by in the center
 short sail & then thick with rain & under
 single reef to sails steering N.W.

Friday
 27th

SAW
 NADAGASCAR

Began with strong breeze from the N.E. steering
 N.W. At 11 p.m. some rain & at 12 p.m. the
 of Madagascar ahead 3 miles. At 1 p.m. lifted the
 ship to the wind & made it by the reefed
 at sun set some thick weather & some squalls
 squalls of rain at 6 p.m. steering N.W. & all
 sail at 11 p.m. &ception from N. steering
 N.W. & strong breeze
 Lat 25-57

Remarks on Board Ship Maath.
Saturday December 28th 1819

Begins with strong breeze from the ESE
the wind shifts by the ESE of Madagascor
at sun set passed a fine top sail schooner
under short sail heading to the N. E. Madag.
fine & pleasant latter the same steering W by S

Lat 28 30 S Long by the 42 15 W

Sunday
29th

Begins with fine & pleasant weather from
the S steering W by S under all sail Maath.
& latter the same

Lat 27 45 S Long by the 40 20 W

Monday
30th

Begins with fine & pleasant weather wind
from the E ship under all sail steering W by S
Middle the same at 10 o'clock the wind shifted
outside in short bursts ship lying to under
double reef main top sail & fore sail that
I was heading to the N

Lat 26 30 S

Tuesday
31st

Begins with strong breeze from the N by E
ship lying to under short reef main top sail
that the same heading to the N by E the same
set double reef top sail heading W by N

Lat 25 15 S Long by the 38 30 W

Remarks on Board Ship Wharfedale

January 1st 1840

Begins with strong breeze from the S by the ship under all sail top sail heading to the N by the wind Middle the same & the more moderate set outside top sails employed in ships duty

Lat 29-06 S Long by Chron 37-44 E

Thursday
2nd

Begins with moderate breeze from the S steering N by S under all sail Middle & Latter calm employed in laying up rigging

Lat 29-18 S Long by Chron 36-10 E

Friday
3rd

Begins with calm Middle & Latter the same employed in ships duty

Lat 28-51 S Long by Chron 35-53 E

Saturday
4th

Begins with calm middle light breezes from the N & steering N by the Latter brisk breezes ship under all sail fine & pleasant

to the

Sunday
5th

Begins with strong breeze from the N & steering N by the under all sail Middle & Latter the same fine & pleasant weather

Lat 29-44 S Long by Chron 37-44 E

Monday
6th

Begins with moderate breeze from the N & steering N by the under all sail at 6 P M calm Middle strong breeze from the S by the wind some rain with lightning Latter strong breeze employed in ships duty

Lat 32-07 S Long by Chron 31-04 E

Remarks on Board Ship Warthen

Sunday January 7th 1810

Began with light breeze from the N by the
standing the ship the windward all sail
made the same

Lat 32-40 Long by the 31-04 E

6th
AWA
CHIT

Began with light breeze from the N steering NW
at 5 P.M. saw a sail off our Stern Middle
of the ship employed in ship's duty

Lat 32-00 Long by the 30-25 E

7th

Began with light breeze from the E steering
NW by P.M. all sail saw a ship bound to the
N.W. of the ship breeze pleasant

Lat 32-00 Long by the 28-29 E

8th

Began with light breeze from the N
steering NW by P.M. in calm at the wind the
sails were the top sail Middle thick with
the wind of the breeze in force of major to sail
at day light bear made all sail heading to
the wind from the N by the employed in ship's duty

Lat 32-00 Long by the 27-25 E

11th

Began with light breeze from the N steering
NW by P.M. all sail Middle of the ship the same
pleasant employment in ship's duty

Lat 34-25 Long by the 26-44 E

12th

Began with light breeze from the N steering
NW by P.M. all sail Middle of the ship the same
the same the wind & considerations

Lat 34-50 Long by the 22-44 E

Remarks on Board Ship Martha Monday January 12th 1840

SAW
A
BRIG

Begins moderate breezes from the East
At 10 AM under all sail fine pleasant at 12
calm at 10 PM light breeze from the S heading
to the N by the wind at 12 M tacked to the
N by the wind at 6 AM saw a Brig to leeward heading
to the N by the wind employed in beating
out after water

Tuesday
14th
SAW
A
SHIP

Lat 34-44 Long by Chron 22-07 E
Begins with moderate breezes from the S heading
to the N by the wind at 3 PM
a ship to windward at 6 PM tacked to the N
tacked again latter calm employed in ships duty

Wednesday
15th

Lat 34-21 Long by Chron 21-35 E
Begins with light breezes from the S steering N
by the wind under all sail at 6 PM saw the South
end of Africa 4 points off our bow in straits
I tacked to the wind heading N by the wind at day light
made all sail steering N by the latter fine
pleasant wind at 1 PM employed in mending down

Thursday
16th
SAW
A
SHIP

Lat 34-59 Long by Chron 19-38 E
Begins with fresh breezes from the S steering N
at 6 PM the south extremity of Africa bore
N by the wind 1/2 mile distant Middle steering N by the wind
all sail latter steering N at 9 AM saw a ship
off our weather quarter steering N by the wind
at 12 M the wind moderate gale

Friday
17th

Lat 34-24 Long by Chron 16-34 E
Begins with strong breezes from the S steering
N at 11 AM under all sail at 3 PM split the fore
gallant sail at 6 PM in calm weather blowing
heavy Middle & latter more moderate at all sail
steering N by the wind employed in putting up
Lat 32-42 S

Remarks on board ship Martha

Tuesday January 18th 1840

SLW
SHIPS

Tuesday
19th

Wednesday
20th

Thursday
21st

Friday
22nd

Saturday
23rd

Boys with strong breeze from the NW
at 5 AM the wind all sail from 1/2 masts
weather moderate the same 8 AM some
ships observed at 10 AM employed in getting rigging
at 11 AM by the 10 AM

Boys with strong breeze from the NW
at 11 AM the wind all sail from 1/2 masts
weather moderate the same

at 12 PM by the 10 AM
Boys with strong breeze steering at 11 AM
under sail Middle & later the same employed
in getting rigging & towing down

at 1 PM by the 10 AM
Boys with moderate breeze steering at 11 AM
under sail Middle & later the same
employed in getting rigging

at 2 PM by the 10 AM
Boys with light breeze & pleasant weather
steering at 11 AM under all sail Middle & later
the same employed in towing down

at 3 PM by the 10 AM
Boys with light breeze & variable from the
NW the Middle the same steering at 11 AM
all sail at 10 AM breeze from the NW the rigging
to the 11 AM the wind at 10 AM a sail to under
at 11 AM

Remarks on Board Ship Maria Theresa

Monday Jan 25th

Begins with light breeze from the N by the wind at 1 P M tacked ship Middle wind from the S steering N by the latter light wind of variable heading to the N by the wind

Tuesday
26th

Lat 23-59 Long by the 2-52 E

Begins with light wind of variable Middle & latter calm

Wednesday
26th

Lat 23-42 - Long by the 2-16 E

Begins with calm at 4 P M light airs from the N steering N by the Middle & latter moderate breezes from the S steering N by the wind and all sail fine & pleasant

Thursday
27th

Lat 22-36 Long by the 1-26 E

Begins with moderate trade steering N by the wind all sail fine & pleasant Middle & latter the same got out the anchors

Friday
28th

Lat 21-35

Begins with moderate trade steering N by the wind under all sail Middle the same latter employed in painting ship out side

Saturday
29th

SAW A
SHIP

Sunday
30

SPOKE THE
MARIA
THERESA

Lat 19-56 Long by the 15-7 E

Begins with moderate trade fine & pleasant weather steering N by the Middle & latter same

Lat 18-51 Long by the 10-27 E

Begins with moderate trade steering N by the wind at 6 P M spoke the Maria Theresa of Bedford all full 18 months out Middle & latter equally the Maria T in sight

Lat 16-48 Long by the 4-40 E

Remarks on Board Ship Martha

Thursday February 18th 1841

Begins with light & variable winds with heavy squalls of rain & sleet the forenoon & evening & gales & rain latter plenty of rain & sleet the rain & sleet & sent a man employed in repairing the main top gaskets with variable winds

Lat 5-54

Friday
19th

Begins with light & variable winds with rain & sleet the forenoon & evening & gales & rain latter light & variable with rain & sleet employed in repairing the sails

Lat 5-54

Saturday
22nd

Begins with rain & sleet the forenoon with rain & sleet light breeze & variable winds

Lat 6-28

Sunday
23rd

Begins with light breeze from the North blowing to the S by the same middle the same latter rain & sleet & the at midday sail from 9 places

Lat 6-56 Long by the 24-24th

Monday
24th

Begins with moderate breeze ship under all sail steering N by E latter the same employed in repairing main top sail

Lat 7-47 Long by the 24-25th

Tuesday
25th

Begins moderate breeze steering N by E under all sail Middle latter the same under a reef to windward

SAWA
SHIP

Lat 8-48 Long by the 26-28th

Remarks on Board Ship Mason
 Obedient February 26th 1850

AW SAIL

Begins with strong trades steering to the
 light under all sail middle of afternoon
 with some rain some a sail

Lat 10 20 N Long by the 37 00 W

Thursday
 27th
 AW SAIL

Begins with strong trades & gradually ship
 under all sail steering to the light middle of
 afternoon the same as a sail & towards

Lat 11 22 N

Friday
 28th

Begins with light trades steering to the light
 under all sail middle of afternoon fine & clear

Lat 13 08 N Long by the 42 11 W

Saturday
 29th

Begins with light trades steering to the light
 under all sail middle of afternoon the same

Lat 14 22 N

Sunday
 March
 1st 1850

Begins with light trades steering to the light
 employed in repairing main sail middle
 of afternoon light wind

Lat 15 48 N Long by the 55 00 W

Monday
 2nd
 SAW SAIL

Begins with moderate trades steering to the
 light middle of afternoon the same at 11 a.m. some
 rain & windward

Lat 17 17 N

Tuesday
 3rd

Begins with moderate trades steering to the
 light under all sail middle of afternoon

Lat 18 14 N

Wednesday
 4th

Begins with light trades steering to the light
 all sail at 6 a.m. some rain steering to the
 fine weather

Lat 19 43 N Long by the 50 37 W

Remarks on Board ship Month
Thursday 10th 1840

SAWASAT

Begins with brisk trades saw a sail
bound to the W Middle brisk trades latter
moderate steering N by E

Lat 21 9 N Long by Chr 51 37 W

Friday
5th

Begins with moderate trades ship under
all sail steering N by E Middle wind
from the S E latter from the S of moderate

Lat 22-27 N

Saturday
7th

Begins with moderate wind from the S
Ship under all sail steering N by E Middle
wind from the S by E with rain in
shorten sails & top of gallants latter wind
from the N by E heading N by the wind employed
in ships dirty fine weather

Lat 24-02 N Long by Chr 54 00 W

Sunday
8th

Begins with light & variable winds Middle
& latter the same steering N by E

Lat 24-42 N Long by Chr 54-43 W

Monday
9th

Begins with light air & calm Middle calm
Middle calm latter light breezes from the
S steering N by E employed in ships dirty

Lat 25 09 N Long by Chr 55-11 W

Tuesday
10th

Begins with calm Middle light air & fair
saw a sail

Lat 25-49 N

Wednesday
11th

Begins with calm Middle light air from
the S latter the same steering N by E

Lat 26-10 N Long by Chr 55-47 W

Don't ask on Board Ship Martha
Thursday March 12th 1840

Began with light breezes from the
steering with middle the same latter wind
from the S by steering to the under all
sail employed in plaining decks

Lat 27-19 N Long by the 55 40 W

Friday
13th

Began with light breeze with light breeze
from the S by ship under all sail steering to
the S by the same latter brisk breezes employed
in plaining decks

Lat 28-28 N

Saturday
14th

Began with brisk breezes from the S by
steering to the S under all sail Middle squally
with lightning & rain & the top sails
latter blowing moderate gale from the S by
steering to the S by the wind from the top
masts one board sent May top Gathers mast
1/2 yard down Lat

Lat 30-00 N Long by the 58 36

Sunday
15th

Began with moderate breeze from the S by
steering to the S by the wind at 4 m backed to the S by ship
under all sail Middle the same latter
more moderate

Lat 31-10 N Long by the 60 10 W

Monday
16th

Began with moderate breezes from the S by
steering to the S under all sail heading to the S by the wind
Middle calm at 6 a m light airs from the S by ship heading
to the S by the wind at 8 a m same & heading to the S
by the wind

Lat 32-10 N Long by the 62 10 W

Remarks on the voyage of the ship
 from March 17th 1860

Begins with strong breezes from the N^W the ship under all sail steering to the N^E by the wind middle of latter the same heading N^W by N by the wind

Lat 30-55 N Long by Chron 60-22

Wednesday
 18th

Begins with strong breezes from the N^W the heading N^W by N by the wind at 6 P M in flying jib & main top gallant sail middle squally double reefed the topsails latter blowing strong ship under double reef topsails heading N^W by N

Lat 32-26 N Long 61-02 N

Thursday
 19

Begins with moderate gale from the N^W the heading to the N^W by the wind at 2 P M off to tacked to the N^W the middle heading up the latter calm & pleasant

Lat 32-06 N

Friday
 20th

Begins with light airs from the N the heading to the N^W by the wind at 6 P M calm middle light breezes from the N^W steering N^W the under all sail squalls of rain latter steering N^W the at 10 some a ship steering N^W

Lat 33-06 N Long by Chron 63-30 N

Saturday
 21st

Begins with light airs from the N with squalls of rain thick weather at 2 P M some a ship steering to the N middle wind from the N^E thick & squally steering N^W the under all sail at 6 P M ship lying to for a ship to windward at 7 P M boarded the ship Monticelli of Providence by way from Harve bound to Plovermouth with loss of sails & spar G. G. Horton master supplied us with bread & potatoes

Lat 33-16 N Long by Chron 64-47 N

Remarks on Board Ship Mantra
Sunday March 22^d 1840

Begins with light breezes from the N.E. Steering N.W. under all sail at 1 P.M. saw a Brig steering to the N. Middle calm. Latter strong breezes from the N. Steering N.W. under double reef topsails got the vessel lost in thick weather

No Ob

Monday
23^d

Begins with strong breezes from the N. Ship under double reef top sails & courses heading N.W. by the wind. Middle more moderate saw a ship steering S. Latter calm employed in ship's duty.

Lat 33-03 N

Tuesday
24th

Begins with calm at 2 P.M. saw a Barque ahead steering to the N.E. at 6 P.M. light breezes from the S.W. made all sail steering N.W. Middle brisk breezes at 6 a.m. thick & squally with rain in afternoon at 9 double reefed the topsails & shortened the mainsail. saw a Barque steering to the N.E. sent down fore top gallant mast & yard in flying jib boom blowing a moderate gale from the S.W. steering N.W.

Lat 34-10 N Long by Chron 69-00 West

Wednesday
25th

Begins a moderate gale from the S.W. N.W. under double reef topsails & fore sail Middle the same thick & raining with lightning. Latter calm divided the last month of bread in the ship amongst all hands which was 4 pound to a man thick weather & calm

No Ob

Remarks on Board Ship Martha
Thursday March 28th 1840

Begins with calm at 2 P M saw 2 sail.
at 6 P M light breezes from the Sth steering Nth thick
weather with lightning Double reefed the topsail
at 12 in fore top sail & fore sail lost reefed the main
top sail ship lying to heading to the E in a heavy gale
from the N^W at 4 A M split the main top sail &
blew the main staysail away & a part of the main top
gallant sail at 12 more moderate wind from the N^W

No Ob

Begins with a heavy gale from the N^W & lying to
under bare poles heading to the E at 3 P M set reefed fore
sail & fore top mast staysail more ship heading to the N^W
& Sth at 4 P M more moderate set down down the
remains of the main top sail & bent another set if doubt
reefed saw 2 ships ahead Middle calm at 6 A M light
breezes from the Sth made sail steering Nth by E fine weather
employed in ships duty

Lat 35-31 N Long by Chron 72-09 W

Begins with brisk breezes from the Sth steering Nth by E
under all sail at 4 P M saw a ship at 12 crossed the
North edge of the gulph stream squall in stud tens
ails Latter squalls of rain in stud tensails wind at
S steering N under all sail saw a brig

Lat 38-04

Begins with brisk breezes at S steering N by E at 12
sounded in 70 fathoms water thick weather Latter the
same ship under all sail at 12 spoke the schooner
Brilliant from Boston bound to Baltimore

Friday
27

Saturday
28th

Sunday
29th

Remarks on Board Ship Martha

Monday March 30th 1840

Begins with brisk breezes & thick weather turns N by E at 11 M spoke the schooner Lorinda of Portland at sun set lost sight the topsails & heaved to the wind heading to the S by E thick fog with lightning in 20 fathoms water latter thick & rainy wind from the S by E heading to E in 18 fathoms water

Tuesday
31st

Begins with strong breezes & thick fog wind from the S by E ship under lost reef top sails making 2 short tacks at 12 M spoke the Echo of Thomastown from Baltimore bound to Boston in 14 fathoms water from that to 20 Middle thick & rainy at 10 P M in 10 fathoms water making short tacks at 10 M the wind shifted to the N course E by E at 9 A M got a pilot gay Head in sight at 12 come to anchor at Martha's Vineyard in 6 fathoms water

Wednesday

April
1st

Begins with strong breezes from the S by E at 6 A M got the ship under weigh & went up to the wharf employed in sending down there light wind from the S by E

Thursday
2nd

Begins with strong breezes from the S by E employed in discharging oil Middle squally from the N by E latter strong breezes from the N by E employed in discharging oil

Arithmetic

Arithmetic is the art of computing by
Numbers and has ^{five} principal Rules for its operations
Viz Numeration, Addition, Subtraction,
Multiplication and Division.

Numeration

Is the art of numbering. it teaches to express
the value of any proposed number by the following
Characters or figures. 1. 2. 3. 4. 5. 6. 7. 8. 9. 0.

Table

1	Units	1
2	1 Tens	10
3	2 1 Hundreds	100
4	3 2 1 Thousands	1000
5	4 3 2 1 tens of Thousands	10000
6	5 4 3 2 1 Hundreds of Thousands	100000
7	6 5 4 3 2 1 Millions	1000000
8	7 6 5 4 3 2 1 Tens of Millions	10000000
9	8 7 6 5 4 3 2 1 Hundreds of Millions	100000000

Examples

Write down in proper figures the following numbers

Thirty six	36
Ninety seven	97
One hundred and twelve	112
Three thousand and five	3005
Six thousand two hundred & twenty	6220
Eighteen thousand nine hundred	18900
Twenty thousand five hundred & five	20505
Forty thousand and ninety seven	40097
Seventy three thousand and eighty	73080
Five hundred thousand one hundred	500100
Nine hundred thousand three hun-	900376
-dred and seventy six	1100019
One Million one hundred thousand and	
-nineteen	
Fifty five Million one hundred thou-	
-sand and ninety	55100090
One hundred millions & twenty	100000020
Eight hundred millions, forty four	
thousand and fifty five	800044055

Solid or Cubic Measure.

lbs.	qrs.	lbs.
6740	54	149
7385	26	104
459	14	63
321	18	999
865	13	264
376	14	931
2541	13	865
1456	10	1
928	24	96
8010	3	85
29141	7	1629
22400	10	1180
29141	7	1629

Wks.	hrs.	ft.
6785	39	
5932	32	
64	33	
78	21	
1199	20	
2345	18	
156	14	
242	8	
8513	9	
4462	20	
33677	106	
26892	67	
33677	106	

Time.

W.	d.	h.
871	3	11
51	2	9
976	0	21
95	3	21
79	1	15
85	6	24
156	5	13
237	4	15
847	5	18
68	6	20
3770	6	23
2899	3	12
3770	6	23

years.	days.	hrs.	min.	sec.
187	149	14	13	12
146	126	16	16	16
59	186	19	39	19
28	140	21	46	35
7	119	22	18	26
146	146	19	57	19
846	254	14	46	53
973	263	18	42	54
584	121	14	31	32
432	214	18	24	59
8543	173	20	54	31
11965	69	9	31	56
11777	284	19	18	44
11965	69	9	31	56

Wheat Bar Measure.

st B.	fur.	gal.
25	2	7
17	3	5
96	2	6
45	1	4
96	3	7
45	0	5
387	2	7
362	0	0
387	2	7

hhd.	gal.	qt.	pt.
48	17	3	1
19	16	2	1
15	51	3	1
46	43	2	1
23	26	3	1
52	38	2	1
266	33	2	0
188	15	2	1
266	33	2	0

Dry Measure.

chal.	qtr.	coomb.	bu.	pkts
38	1	4	5	3
47	1	3	6	2
62	0	2	4	3
45	1	4	3	3
78	1	1	2	2
29	1	3	6	2
302	2	8	11	3
264	1	4	6	0
302	2	8	11	3

qr.	bush.	peck.	qt.
57	4	2	1
19	5	3	1
38	6	2	3
27	7	3	7
5	3	1	4
9	2	2	3
72	5	3	2
231	4	2	5
174	0	0	4
231	4	2	5

Coal Measure

vat.	Sack.	bush.	peck
11	6	2	1
16	5	1	3
12	3	1	2
15	7	2	1
16	8	1	3
18	6	2	2
15	5	1	1
9	7	2	3
5	8	2	2
123	7	0	2
112	0	1	1
123	7	0	2

Scoar.	chal	Sack.	Bush.	pkts
146	54	4	8	2
132	86	3	6	1
64	532	2	4	2
143	56	3	5	1
65	472	1	3	2
32	124	3	9	1
75	456	2	8	2
31	238	3	5	1
68	653	1	4	2
38	577	2	5	10
36	811	8	1	1
38	577	2	5	10

Square Measure

S.M. Acres Roods Rods

638 - 69 - 2 - 30

412 - 72 - 1 - 24

364 - 36 - 2 - 16

831 - 42 - 1 - 6

648 - 17 - 3 - 11

317 - 16 - 1 - 18

234 - 67 - 2 - 33

651 - 84 - 3 - 22

438 - 61 - 2 - 32

4535 - 145 - 1 - 32

3897 - 75 - 3 - 2

4535 - 145 - 1 - 32

yd. feet. inch

2348 - 6 - 35

4132 - 5 - 28

5423 - 4 - 16

6341 - 2 - 24

4236 - 3 - 23

8315 - 1 - 63

1824 - 3 - 58

5311 - 2 - 34

4238 - 4 - 28

42171 - 5 - 21

39822 - 7 - 130

42171 - 5 - 21

Subtraction of Money Weights and Measures.

£. s. d.

574 - 16 - 8 $\frac{1}{4}$

347 - 12 - 9 $\frac{1}{4}$

227 - 3 - 11 -

574 - 16 - 8 $\frac{1}{4}$

£. s. d.

1247 - 10 - 8 $\frac{1}{2}$

824 - 14 - 9 $\frac{1}{4}$

422 - 15 - 11 $\frac{1}{4}$

1247 - 10 - 8 $\frac{1}{2}$

£. s. d.

179 - 7 - 10 $\frac{3}{4}$

83 - 9 - 10 $\frac{1}{2}$

95 - 18 - 0 $\frac{2}{4}$

179 - 7 - 10 $\frac{3}{4}$

£. s. d.

316 - 3 - 5 $\frac{1}{2}$

218 - 2 - 1 $\frac{3}{4}$

98 - 1 - 3 $\frac{3}{4}$

316 - 3 - 5 $\frac{1}{2}$

Grovy Weight

lb. Oz. dwt gr
 52 " 1 " 7 " 2
 39 " 0 " 15 " 7
 13 " 0 " 11 " 19
 52 " 1 " 7 " 2

lb. Oz. dwt gr
 7 " 2 " 2 " 7
 5 " 7 " 1 " 5
 1 " 7 " 1 " 2
 7 " 2 " 2 " 7

Verdupoise Weight

Ton. cwt. gr. lb. Oz. dr.
 100 " 10 " 7 " 11 " 14 " 13
 15 " 13 " 1 " 18 " 12 " 15
 84 " 14 " 5 " 21 " 1 " 14
 100 " 10 " 7 " 11 " 14 " 13

Cwt. gr. lb.
 59 " 1 " 11
 19 " 3 " 27
 39 " 1 " 12
 59 " 1 " 11

Apotecaries Weight

lb. 3. 3 D gr
 422 " 3 " 4 " 1 " 13
 311 " 7 " 5 " 2 " 10
 110 " 7 " 6 " 2 " 3
 422 " 3 " 4 " 1 " 13

lb. 3. 3 D
 115 " 2 " 1 " 0
 17 " 5 " 2 " 1
 97 " 8 " 6 " 2
 115 " 2 " 1 " 0

Cloth Measure

Yard. gr. nl
 251 " 1 " 2
 127 " 3 " 3
 123 " 1 " 3
 251 " 1 " 2

Cu. Ft. gr. nl
 189 " 2 " 1
 120 " 2 " 2
 68 " 5 " 3
 189 " 2 " 1

Wine Measure

Hhd. gal gts pt.
 147 " 47 " 2 " 1
 128 " 59 " 3 " 0
 18 " 50 " 3 " 1
 147 " 47 " 2 " 1

Pun. gal qt pt
 1800 " 50 " 2 " 1
 1262 " 61 " 3 " 1
 537 " 72 " 3 " 0
 1800 " 50 " 2 " 1

Long Measure.

fur. po. yd. feet in bar
 3468 " 33 " 4 " 1 " 11 " 1
 2324 " 31 " 3 " 2 " 10 " 2
 1144 " 2 " 0 " 2 " 0 " 2
 3468 " 33 " 4 " 1 " 11 " 1

lea. m. fur po
 147 " 2 " 6 " 29
 58 " 2 " 7 " 33
 88 " 2 " 6 " 36
 147 " 2 " 6 " 29

W. M.

Hhd. gal qt pt
 100 " 36 " 3 " 1
 9 " 27 " 3 " 1
 91 " 9 " 0 " 0
 100 " 36 " 3 " 1

Hhd. gal qts
 127 " 27 " 1
 112 " 50 " 2
 14 " 30 " 3
 127 " 27 " 1

Dry Measure

ste bus pc
 86 " 1 " 3
 14 " 0 " 2
 72 " 1 " 1
 86 " 1 " 3

bus peck gal qt pf
 115 " 2 " 0 " 1 " 1
 10 " 3 " 1 " 0 " 1
 104 " 2 " 1 " 1 " 0
 115 " 2 " 0 " 1 " 1

Square Measure.

S. M. acre rods rod
 608 " 406 " 3 " 22
 142 " 400 " 2 " 33
 466 " 6 " 0 " 29
 608 " 406 " 3 " 22

yd feet in
 2341 " 6 " 108
 1411 " 7 " 100
 929 " 8 " 8
 2341 " 6 " 108

Time Measure

yr mth. week. d. h. m. sec
 3486 " 11 " 3 " 5 " 15 " 23 " 52
 2134 " 11 " 3 " 6 " 13 " 21 " 53
 1351 " 11 " 3 " 6 " 2 " 1 " 59
 3486 " 11 " 3 " 5 " 15 " 23 " 52

yr mo. we. da
 149 " 8 " 2 " 4
 123 " 9 " 3 " 5
 25 " 10 " 2 " 6
 149 " 8 " 2 " 4

Solid or Cubic Measure.

yd ft in.
 48 " 24 " 1234
 40 " 26 " 1659
 7 " 24 " 1303
 48 " 24 " 1234

Load. H. T. Inc
 450 " 30 " 161
 195 " 36 " 1243
 254 " 43 " 646
 450 " 30 " 161

Multiplication (comp $\frac{L}{d}$) Money.

£. s. d.
 5462 " 14 " 11 $\frac{1}{2}$
 5
 27313 " 14 " 9 $\frac{2}{4}$
 £ s. d.
 2049 " 18 " 4 $\frac{1}{2}$
 9
 18449 " 5 " 4 $\frac{2}{4}$

£. s. d.
 549 " 18 " 11 $\frac{1}{4}$
 6
 3299 " 13 " 7 $\frac{2}{4}$
 £ s. d.
 980 " 19 " 11 $\frac{1}{4}$
 12
 11771 " 19 " 9

Troy Weight.

lb. oz. dwt. gr
 14 " 9 " 14 " 17
 5
 74 " 0 " 13 " 13

lb. oz. dwt. gr
 825 " 8 " 19 " 22
 8
 6605 " 11 " 19 " 8

Apothecaries Weight.

Jon. cwt. gr. lb. oz. dr
 384 " 17 " 1 " 14 " 11 " 14
 7
 2694 " 1 " 2 " 19 " 3 " 2

Jon. cwt. gr. lb.
 29 " 16 " 3 " 25
 9
 268 " 12 " 3 " 1

Apothecaries Weight.

lb. 3. 3. 3 grs
 118 " 9 " 6 " 2 " 18
 12
 1425 " 10 " 3 " 1 " 16

lbs oz dr. sc grs
 495 " 10 " 7 " 2 " 15
 12
 5950 " 11 " 7 " 0 " 0

Cloth Measure

Fr. C. gr. al. in
4563 " 2 " 3 " 1
11

Long. C. W. grs. nls. inc
8900 " 4 " 3 " 2
12

50203 " 1 " 1 " 2

106811 " 4 " 2 " 1 1/2

Long Measure

fur. ps. yd. ft. inc bar
418 " 32 " 4 " 2 " 10 " 2
10

lea m fur ro yd.
4832 " 2 " 6 " 38 " 4
9

4188 " 8 " 5 " 1 " 10 " 2

43496 " 1 " 6 " 25 " 3

Wine Measure

A B. gall. qt. pt.
843 " 8 " 3 " 1
12

gall. qt. pt. gills
3008 " 2 " 1 " 3
6

10126 " 6 " 2 " 0

18052 " 1 " 0 " 2

Ale and Beer Measure

Kil. fir gall. qt. pts
348 " 1 " 8 " 3 " 1
12

Alld. bbl. kil fkn. gall. qt. pts
65 " 1 1/4 " 1 " 1 " 6 " 3 " 1
12

4187 " 1 " 7 " 2 " 0

488 " 2 " 0 " 1 " 1 " 2 " 0

Dry Measure

Last. wry gr. coom. str. bus. pks gal.
1433 " 1 " 4 " 0 " 1 " 1 " 3 " 1
9

wry gr. coom. str. bus
304 " 3 " 1 " 0 " 1
6

12905 " 1 " 0 " 0 " 1 " 0 " 3 " 1

1828 " 1 " 1 " 1 " 0

Solid or Cubic Measure

yds ft. In
1800 " 24 " 1234
12

Tons ft ha tmbr in
854 " 46 " 1684
9

21610 " 26 " 984

4694 " 22 " 1332

Square Measure.

Acres rods po yd ft in
 324 " 3 " 32 " 24 " 8 " 98
 11

Pole yd. ft. in
 144 " 28 " 8 " 108
 12

3574 " 2 " 1 " 1 1/4 " 5 " 70

1739 " 14 1/4 " 6 " 0

L S d

L S d

45467 " 14 " 10 1/4
 11

432148 " 18 " 11 1/2 by 132

12 x 11 = 132

500145 " 3 " 4 3/4
 10

5185787 " 7 " 6.0
 11

5001451 " 13 " 11 3/4

57043661 " 2 " 60

Troy Weight.

lbs. oz dwt. gr

lb. oz dwt. gr

46 " 11 " 14 " 22 by 29

648 " 11 " 19 " 22 by 57

7 x 4 + 1 = 29

6 x 9 + 3 = 57

328 " 10 " 4 " 10
 4

3893 " 11 " 19 " 12

1315 " 4 " 17 " 16

35045 " 11 " 15 " 12

46 " 11 " 14 " 22

1946 " 11 " 19 " 18

1362 " 4 " 12 " 14

36992 " 11 " 15 " 6

Avoirdupois Weight.

Tom. cwt. gr. lb. oz dr

Tom cwt. gr. lb. oz dr

684 " 18 " 3 " 24 " 14 " 15 by 1 89

34 " 16 " 3 " 26 " 15 " 14 x by 197

9 x 9 + 8 = 89

10 x 9 + 7 = 97

6164 " 10 " 3 " 0 " 6 " 7

348 " 9 " 3 " 17 " 14 " 12

9

9

55488 " 16 " 3 " 3 " 9 " 15

3136 " 9 " 0 " 21 " 4 " 12

5479 " 11 " 3 " 3 " 7 " 8

243 " 10 " 3 " 20 " 15 " 2

60960 " 8 " 2 " 7 " 1 " 7

3380 " 8 " 0 " 14 " 3 " 14

Apothecaries Weight

$\text{lb. } 3 \text{ } 3 \text{ } 3 \text{ } \text{gr}$
 $28'' 11'' 6'' 2'' 19 \text{ by } 257$
 $10 \times 10 \times 2$
 $289'' 10'' 5'' 2'' 10$
 10
 $2890'' 11'' 2'' 1'' 0$
 2
 $5797'' 10'' 4'' 2'' 0$
 $1652'' 4'' 6'' 0'' 3$
 $7450'' 3'' 2'' 2'' 3$

$\text{lb. } 3 \text{ } 3 \text{ } 3 \text{ } \text{gr}$
 $32'' 11'' 5'' 2'' 18 \text{ by } 801$
 $10 \times 10 \times 8 + 1 = 801$
 $329'' 9'' 5'' 2'' 0$
 10
 $3297'' 10'' 4'' 2'' 0$
 8
 $26285'' 0'' 5'' 1'' 0$
 $32'' 11'' 5'' 2'' 18$
 $26316'' 0'' 3'' 0'' 18$

Division of Several Denominations.

Rule. Divide the first Denomination on the left hand and, if any remains, multiply them by as many of the next less as make one of that, which add to the next, and divide as before.

Examples.
 $\begin{array}{r} \text{£. } \text{s. } \text{d.} \\ 8 \overline{) 456'' 19'' 10 \frac{1}{2}} \\ \underline{57'' 2'' 5 \frac{3}{4}} \end{array}$

$\begin{array}{r} \text{£. } \text{s. } \text{d.} \\ 456'' 19'' 10 \frac{1}{2} \end{array}$

$\begin{array}{r} \text{£. } \text{s. } \text{d.} \\ 9 \overline{) 18383'' 8'' 11 \frac{3}{4}} \\ \underline{2042'' 12'' 1 \frac{1}{4}} \end{array}$

$\begin{array}{r} \text{£. } \text{s. } \text{d.} \\ 18383'' 8'' 11 \frac{3}{4} \end{array}$

Troy Weight

lb. oz. dwt. grs
 $\begin{array}{r} 8 \overline{) 864'' 11'' 18'' 23} \\ \underline{108'' 1'' 9'' 20} \end{array}$
 8
 $864'' 11'' 18'' 23$

lb. oz. dwt. grs
 $\begin{array}{r} 7 \overline{) 954'' 10'' 14'' 21} \\ \underline{136'' 4'' 19'' 6} \end{array}$
 7
 $954'' 10'' 14'' 21$

Sverdipaise Weight.

Ton. cwt. gr. lb. q. dr.
 9) 4264 " 18 " 3 " 26 " 14 " 15
 473 " 17 " 2 " 18 " 8 " 12 - 3

Lon. calc. p. 11. of des

10) $46^{\circ}54'19''2''27''15''14''$
 $46^{\circ}5'9''3''25''3''3''$

9
4264" 18" 3" 25" 14" 15"

10
4054.19.2.27.15.14

Apothecaries Weight

$\frac{11}{11} \quad 6346'' \quad 11'' \quad 6'' \quad 2'' \quad 18''$
 $\quad \quad \quad 576'' \quad 11'' \quad 7'' \quad 2'' \quad 14 = 4$

W of dr se grs
12) 5464" 10" 7" 1" 19
455" 4" 7" 0" 18 = 3

6346 " 11 " 6 " 2 " 18

5464¹² 10¹² 7¹² 1¹² 19¹²

Long Measure.

lea. Mt. fur. pole
 125 86.50" 2" 7" 30"
 4.50
 11.50

les. mt. fr pot
(69 " 0 " 4 " 39
12

830 " 1 " 5 " 28

سفر ۱۱۲

.. 25

3

77

8

$$\begin{array}{r} 125 \overline{) 625} \quad (4 \\ \underline{500} \\ 125 \end{array}$$

P 304 " 2 " 5 " 0

3461 0'0"35

8650" 2" 5" 35

1.55

2650"2"7"30

$$\begin{array}{r} 40 \\ \hline 125 \overline{) 4950} \quad 39 \\ \underline{575} \\ 1200 \end{array}$$

1125

.. 75

Long Measure.

	Rod yd ft in BC	Rod yd ft in BC
(136)	8462 " 4 " 2 " 10 " 2	(62 " 1 " 0 " 8 " 2
	816	12
	302	746.3.2.8.0
	272	11
$\frac{1}{2}$	30	8213.3.2.4.0
	5 $\frac{1}{2}$	248.4.2.10.2
	154	8462.3.2.2.2
	15	3.8.0
(136)	169 (1	8462.4.2.10.2
	136	
	33	
	3	
	101	
	12	
(136)	1222 (8	
	1088	
	134	
	3	
(136)	404 (2	
	272	
	132	

Wine Measure.

	Anker. gall. qt. pt. gills	
4586	56234 " 9 " 3 " 1 " 3	(12.2.2.0.3
	4586	10
	10374	122.5.3.1.2
	9172	10
	1202	1225.9.1.1.0
	10	10
4586	12029 (2	12259.3.3.0.0
	9172	4
	2857	49037.5.0.0.0
	4	8129.6.3.1.0
4586	11431 (2	1054.3.0.0.2
	9172	50221.4.3.1.2
	2259	13.5.0.0.1
	2	50234.9.3.1.3
4586	4519 (0	
	4	
4586	18079 (3	
	13758	
	4321	

Ale and Beer Measure

$$\begin{array}{r} \text{Hhds} \quad \text{gls} \quad \text{gls} \\ 95463 \quad 532416 \quad 36 \quad 3 \quad \dots \quad 31 \quad 0 \quad 1 \\ \underline{477315} \\ 55101 \end{array}$$

$$\begin{array}{r} 54 \\ 220410 \\ 275508 \frac{1}{2} \\ 95463 \quad 2975490 \quad (31) \\ \underline{286389} \\ 111600 \\ \underline{95463} \\ 16137 \\ \underline{4} \\ 64551 \end{array}$$

$$\begin{array}{r} 2 \\ 95463 \quad 129102 \quad (1) \\ \underline{95463} \\ 33639 \end{array}$$

Time Measure

$$\begin{array}{r} \text{Years} \quad \text{dys.} \quad \text{hrs.} \quad \text{1} \quad \text{11} \\ 673247 \quad 53245768 \quad 5 \quad 22 \quad 54 \quad 51 \quad (7932131012) \\ \underline{4712729} \\ 6118478 \\ \underline{6059223} \\ 59255 \\ \underline{365} \end{array}$$

$$\begin{array}{r} 296280 \\ 355530 \\ 177765 \\ 673247 \quad 21628080 \quad (32) \\ \underline{2019741} \\ 1430670 \\ \underline{1346494} \\ 84176 \end{array}$$

$$\begin{array}{r} 30354 \\ 60 \\ 673247 \quad 1821291 \quad (2) \\ \underline{1346494} \\ 474797 \end{array}$$

$$\begin{array}{r} 24 \\ 336706 \\ 168354 \\ 673247 \quad 2020246 \quad (3) \\ \underline{2019741} \\ 505 \\ \underline{60} \\ 30354 \end{array}$$

Reduction

Teaches to bring numbers from one name or denomination to another name, without altering their value.

Rule — to bring any number to a lower name, multiply by as many of the less as make one of the greater: to bring it to a higher name divide.

Money.

In 15 £. 8 s. 7 d. how many farthings?

$$\begin{array}{r}
 \text{£} \quad \text{s} \quad \text{d} \quad \text{q} \\
 15 \quad 8 \quad 7 \quad \frac{1}{2} \\
 \hline
 20 \\
 308 \\
 \hline
 12 \\
 3703 \\
 \hline
 4 \\
 14814
 \end{array}$$

Reduce 350 £. 16 s. 8 d. to farthings? In 27 guineas how many pence?

$ \begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 350 \quad 16 \quad 8 \quad \frac{1}{4} \\ \hline 20 \\ 7016 \\ \hline 12 \\ 84200 \\ \hline 4 \\ 336801 \end{array} $	$ \begin{array}{r} 27 \\ 21 \\ \hline 27 \\ 54 \\ \hline 507 \\ \hline 12 \\ 6084 \text{ d} \end{array} $
--	--

In 100 crowns how many farthings?

$$\begin{array}{r}
 100 \\
 \hline
 60 \\
 6000 \\
 \hline
 4 \\
 24000
 \end{array}$$

In 4873 £. 17 s. 11 d. how many halfpence?

$$\begin{array}{r}
 \text{£} \quad \text{s} \quad \text{d} \\
 4873 \quad 17 \quad 11 \quad \frac{1}{2} \\
 \hline
 20 \\
 97477 \\
 \hline
 12 \\
 1169735 \\
 \hline
 2 \\
 2339471
 \end{array}$$

In 10,000 pence how many guineas?

$$\begin{array}{r} 12 \overline{) 10,000} \\ 21 \overline{) 833} \text{ " } 4 \text{ (39 Gui} \\ \underline{63} \\ 203 \\ \underline{189} \\ \cdot 14 - 4 \end{array}$$

Reduce 3807 moidores into sixpences?

$$\begin{array}{r} 3807 \\ \underline{27} \\ 20049 \\ \underline{4614} \\ 102789 \\ \underline{2} \\ 205578 \end{array}$$

In 52482 twopences how many sixpences halfcrowns and crowns?

$$\begin{array}{r} 52482 \\ \underline{2} \\ 6 \overline{) 104964} \\ 3 \overline{) 17494} \text{ sixpences} \\ 2 \overline{) 3498} \text{ " } 4 \text{ halfcrowns} \\ \underline{1749} \text{ " } 4 \text{ crowns} \end{array}$$

How many piastres, at 3s. 4d. each, are there in £1875. 13s. 4d.?

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 1875 \text{ " } 13 \text{ " } 4 \\ \underline{20} \\ 37513 \\ \underline{12} \\ 40 \overline{) 450160} \\ \underline{11254} \end{array}$$

In 1200 groats how many crowns?

$$\begin{array}{r} 1200 \\ \underline{4} \\ 80 \overline{) 4800} \\ \underline{80} \end{array}$$

In £1000 how many groats?

$$\begin{array}{r} 1000 \\ \underline{20} \\ 20000 \\ \underline{12} \\ 4 \overline{) 240000} \\ \underline{80000} \end{array}$$

In 1000 crowns as many halfcrowns, shillings sixpences and pence how many farthings?

$\begin{array}{r} 1000 \\ \underline{60} \\ 60000 \end{array}$	$\begin{array}{r} 60000 \\ \underline{30000} \\ 10000 \end{array}$
$\begin{array}{r} 60000 \\ \underline{2} \\ 12000 \end{array}$	$\begin{array}{r} 12000 \\ \underline{4} \\ 436000 \end{array}$

$$\begin{array}{r}
 12 \\
 10 \\
 \hline
 120 \\
 7 \\
 \hline
 840 \\
 14 \\
 \hline
 3300 \\
 840 \\
 \hline
 20 \overline{) 11760} \\
 \underline{ 588}
 \end{array}$$

How many 3 inch cubes could be cut out of the above, and what would be the value of each?

$$\begin{array}{r}
 840 \\
 1728 \\
 \hline
 5720 \\
 1580 \\
 \hline
 5880 \\
 840 \\
 \hline
 27 \overline{) 1451520} \quad (53760 \text{ Cubes } 2\frac{1}{2} \text{ each}) \\
 \underline{ 135}
 \end{array}$$

$$\begin{array}{r}
 101 \\
 81 \\
 \hline
 205 \\
 189 \\
 \hline
 102 \\
 102 \\
 \hline
 0
 \end{array}$$

$$\begin{array}{r}
 \text{in} \quad 0 \quad \text{feet} \\
 \text{As } 1728 : 14 :: 27
 \end{array}$$

$$\begin{array}{r}
 12 \\
 158 \\
 27 \\
 \hline
 1170 \\
 330 \\
 \hline
 1728 \overline{) 4530} \quad (2\frac{1}{2} \text{ each}) \\
 \underline{ 3450} \\
 1080
 \end{array}$$

$$\begin{array}{r}
 4 \\
 1728 \overline{) 4320} \quad (\frac{1}{2}) \\
 \underline{ 3458} \\
 864
 \end{array}$$

Painting, Plastering, Joining &c.

Measuring by the square yard.

Note. Divide the square foot by 9, and it will give the square yard.

What should a painter charge for painting a room, the walls of which were 8 feet high the room 18 feet by 14, ceiling included at 2s 8d per yard?

$ \begin{array}{r} 14 \\ \times 8 \\ \hline 112 \\ \times 2 \\ \hline 224 \end{array} $	$ \begin{array}{r} 18 \\ \times 8 \\ \hline 144 \\ \times 2 \\ \hline 288 \\ 224 \\ \hline 252 \end{array} $	$ \begin{array}{r} 14 \\ \times 18 \\ \hline 112 \\ \times 14 \\ \hline 252 \end{array} $
---	---	---

$ \begin{array}{r} 9 \overline{) 704} \\ 3 \overline{) 3} \quad 84 \cdot 8 \\ \underline{32} \\ 108 \\ \underline{252} \\ 2088 \end{array} $	$ \begin{array}{r} 3 \overline{) 3} \quad 10 \frac{1}{2} \\ 1 \overline{) 3} \quad 10 \frac{1}{2} \\ 1 \overline{) 3} \quad 3 \frac{1}{2} \\ \underline{3 \frac{1}{2}} \end{array} $
---	---

$ \begin{array}{r} 12 \overline{) 2710} \\ 20 \overline{) 2204} \\ \hline \pounds 11 \cdot 8 \cdot 4 \end{array} $

What should be charged for painting 3 rooms the first 15 feet by 12 walls 7 feet high the second 13 feet by 9 walls 6 ft 9 in high, the third 20 feet by 15 walls 8 1/2 feet high at 1s 3d per yard?

feet		ft in	ft in
15	12	13 0	6 9
7	7	0 9	9 9
<u>10 5</u>	<u>84</u>	<u>78 0</u>	<u>80 9</u>
2	2	9 9 0	2
<u>210</u>	<u>168</u>	<u>87 9 0</u>	<u>121 6</u>
	<u>210</u>	<u>2</u>	
feet	<u>378</u>	175 0 0	42
2 15		121 6 0	220
8 1/2		297 0 0	8 1/2
120		378 0 0	100
7 0		595 0 0	10
<u>127 0</u>	9) 1270		<u>170</u>
2		141 1 4	<u>2</u>
<u>255</u>	1 1/2	15	340
		705	<u>255</u>
		141	<u>595</u>
		2115	1 1/2
	4 1/3	1 1/4	1 3
		0 1/4	12
		12) 2110 1/2	<u>15</u>
		20) 170 4 1/2	
		<u>£8 10 4 1/2</u>	

What should be charged for painting on each side 10 doors whose measure is 6 ft 0 in high 3 ft 8 in broad at 7 1/2 d per yard?

	ft in
	6 0
	3 8
	<u>19 0</u>
	44 0
9)	<u>23 10 0</u>
	27 9
0 1/2	30
	00
1 1/2	15
0 1/2	2 0
3 1/2	1 3
	<u>0 7 1/2</u>
4)	<u>79 4 1/2</u>
12)	<u>19 10 0 1/2</u>
	<u>£1 13 0 1/2</u>

Flooring Partitioning Roofing Tiling &c

Or Measuring by the square of 100 feet

1. These are measured by squares of 10 feet each square containing 100 feet that is by 100, therefore divide the feet in the product by 100, and it will give the number of squares.

How many squares are there in a partition measuring 361 ft 6 in long and 25 ft 5 in high and what will it come to at 4 £ 10s per square?

ft	in
361	6
<hr/>	
25	5
<hr/>	
9399	0
180	90
<hr/>	
100)	957990
	957990
	<hr/>
	9011
	<hr/>
	85150
	<hr/>
	719 ¹ / ₄
20)	85219 ¹ / ₄
	<hr/>
	£431.1.9 ¹ / ₄

£	s
4	10
<hr/>	
20	
<hr/>	
50 ¹ / ₂	90
25 ¹ / ₂	45
4 ¹ / ₂	22 8
8 ¹ / ₂	3 7 ¹ / ₄
3 ¹ / ₂	0 5 ¹ / ₄
	<hr/>
	0 2 ³ / ₄
	<hr/>
	71 9 ¹ / ₄

If a house measures within the walls 25 ft 4 in long, and 15 ft 3 in broad, and the roof be of a true pitch, what will it come to roofing at one guinea per square?

$$\begin{array}{r}
 \text{ft} \quad \text{in} \\
 25 \cdot 4 \\
 15 \cdot 3 \\
 \hline
 395 \cdot 0 \\
 5 \cdot 7 \cdot 0 \\
 \hline
 \frac{1}{2} 401 \cdot 7 \cdot 0 \\
 200 \cdot 9 \cdot 0 \\
 \hline
 100002 \cdot 5 \cdot 0 \\
 0 \cdot 2 \cdot 5 \cdot 0 \\
 \hline
 2 \overline{) 50} \quad 21 \\
 \underline{120} \\
 4 \overline{) 6} \quad 0 \cdot 5 \\
 6 \overline{) 8} \quad 0 \cdot 0 \frac{3}{4} \\
 \underline{0 \cdot 0} \\
 20 \overline{) 120} \quad 5 \frac{3}{4} \\
 \underline{0 \cdot 0 \cdot 5 \frac{3}{4}}
 \end{array}$$

Bricklayers' Work,

Bricklayers always value their work at a buck and a half, or three half bucks thick, which is called the standard measure.

Rule - Multiply the total number of feet in the wall by the number of half bricks in the thickness of it, and divide the product by 3 which will give the standard measure, then divide by 272 $\frac{1}{4}$ (The square of 16 $\frac{1}{2}$ ft) and the quotient will be the rods required. The $\frac{1}{4}$ is mostly rejected in favour of the workman.

A wall measures 782 feet in length, 9 ft high, 3 $\frac{1}{2}$ bricks thick, how much will it come to at 3 £ 12s per rod?

$$\begin{array}{r}
 782 \\
 9 \\
 \hline
 7038 \\
 7 \\
 \hline
 3) 49260 \\
 272) 10422 \quad (00 \\
 \underline{1032} \\
 102 \\
 \underline{272} \quad \frac{3}{8}
 \end{array}$$

$$\begin{array}{r}
 3 \cdot 12 \\
 20 \\
 \frac{3}{8} \overline{) 4} \quad 72 \\
 80 \\
 \hline
 4320 \\
 8 \overline{) 18} \\
 9 \\
 \hline
 20) 4347 \\
 \underline{£217 \cdot 7}
 \end{array}$$

Extraction of the square Root

To extract the square is to find a number which multiplied by itself will produce the given number.

Rule. Mark a point over the unit figure and over every alternate figure which will divide the line into periods of two figures each. Place the root whose square most nearly approximates to the first period in the quotient. Subtract the square of it from the first period. Bring down the next period to the remainder for a fresh dividend. Double the figures in the quotient for a divisor and find how many times it is contained in the tens of the dividend. Place the figure representing the number of times in the quotient and also as the unit figure in the divisor. Multiply the divisor by the last figure in the quotient. Subtract the product; bring down another period and proceed thus till the whole are brought down. The quotient is the root required.

What is the square root of 9025?

$$\begin{array}{r} 9025 \quad (95. \\ 81 \\ 185) 925 \\ \underline{925} \\ \end{array}$$

What is the square root of 197136?

$$\begin{array}{r} 197136 \quad (444. \\ 16 \\ 84) 371 \\ \underline{336} \\ 884) 3536 \\ \underline{3536} \\ \end{array}$$

What is the square root of 177241?

$$\begin{array}{r} 177241 \quad (421. \\ 16 \\ 82) 172 \\ \underline{164} \\ 841) 841 \\ \underline{841} \\ \end{array}$$

What is the square root of 205209?

$$\begin{array}{r} 205209 \quad (453. \\ 16 \\ 85) 452 \\ \underline{425} \\ 903) 2709 \\ \underline{2709} \\ \end{array}$$

The square root of a vulgar fraction is found by extracting the square of the numerator for a new numerator, and the ^{square root} of the denominator for a new denominator.

What is the square root of $\frac{625}{11881}$?

$$\begin{array}{r} 10 \overline{) 4} \\ 10 \end{array}$$

$$25 \overline{) 5}$$

$$25$$

What is the square root of $\frac{121}{289}$?

$$\begin{array}{r} 121 \\ 289 \end{array}$$

$$121 \overline{) 11}$$

$$1 \overline{) 17}$$

$$21 \overline{) 21}$$

$$21$$

$$289 \overline{) 17}$$

$$1$$

$$27 \overline{) 189}$$

$$189$$

What is the square root of $\frac{625}{11881}$?

$$625 \overline{) 25}$$

$$4 \overline{) 109}$$

$$45 \overline{) 225}$$

$$225$$

$$11881 \overline{) 109}$$

$$1$$

$$209 \overline{) 1881}$$

$$1881$$

What is the square root of $\frac{169}{441}$?

$$\begin{array}{r} 169 \\ 441 \end{array}$$

$$169 \overline{) 13}$$

$$1 \overline{) 21}$$

$$23 \overline{) 59}$$

$$59$$

$$441 \overline{) 21}$$

$$4$$

$$41 \overline{) 41}$$

$$41$$

To extract the square root of a mixed number, reduce it to an improper fraction, and proceed as in the last case.

What is the square root of $6\frac{19}{25}$?

$$6\frac{19}{25} = \frac{159}{25}$$

$$169 \overline{) 13}$$

$$1 \overline{) 5(13}$$

$$23 \overline{) 69} \text{ Ans } 2\frac{3}{5}$$

$$69$$

$$25 \overline{) 5}$$

$$25$$

What is the square root of $29\frac{52}{81}$?

$$29\frac{52}{81} = \frac{2401}{81}$$

$$2401 \overline{) 49}$$

$$16 \overline{) 9(49}$$

$$89 \overline{) 801} \text{ Ans } 5\frac{4}{9}$$

$$801$$

$$81 \overline{) 9}$$

$$81$$

quotient by 300 for a divisor. Find how
 often it is contained in the dividend
 and put the number in the quotient. Multi-
 ply the divisor by this number. Add to the
 product the amount of all the figures in
 the quotient, multiply by 30 except the last,
 and that product by the square of the last.
 To this add the cube of the last figure in
 the quotient, and subtract the whole from
 the dividend. Bring down another period,
 and proceed as before described.

What is the Cube root of 357911?

$$\begin{array}{r}
 357911 \quad (71. \\
 \underline{343} \\
 14700 \quad) \quad 14911 \text{ Resolvent} \\
 \underline{14700} \\
 211 \\
 14911 \text{ Subtrahend} \\
 \underline{}
 \end{array}$$

What is the Cube root of 9938375?

$$\begin{array}{r}
 9938375 \quad (215. \\
 \underline{8} \\
 1200 \quad) \quad 1938 \text{ Resolvent} \\
 \underline{1200} \\
 81 \\
 6261 \\
 877375 \text{ Resolvent} \\
 \underline{881500} \\
 15875 \\
 677375 \text{ Subtrahend} \\
 \underline{}
 \end{array}$$

The cube root of a Vulgar fraction is found by
 extracting the cube root of the numerator for a
 new numerator, and the cube root of the denominator
 for a new denominator.

What is the cube root of 125 ? What is the cube root of $\frac{64}{125}$?

$$\begin{array}{r} 1 \overline{) 125} \\ \underline{1} \\ 125 \end{array}$$

$$\begin{array}{r} 125 \overline{) 125} \\ \underline{125} \\ 0 \end{array}$$

$$\begin{array}{r} 64 \overline{) 64} \\ \underline{64} \\ 0 \end{array}$$

$$\begin{array}{r} 125 \overline{) 125} \\ \underline{125} \\ 0 \end{array}$$

What is the cube root of $\frac{27}{1331}$? What is the cube root of $\frac{512}{3375}$?

$$\begin{array}{r} 27 \overline{) 27} \\ \underline{27} \\ 0 \end{array}$$

$$1331 \overline{) 1331}$$

$$300 \overline{) 331} \text{ resolvend}$$

$$\underline{31}$$

$$\underline{331} \text{ Subtrahend}$$

$$\begin{array}{r} 512 \overline{) 512} \\ \underline{512} \\ 0 \end{array}$$

$$\begin{array}{r} 3375 \overline{) 3375} \\ \underline{3375} \\ 0 \end{array}$$

To extract the cube root of a mixed number reduce them to an improper ^{fraction} and proceed as in the last case.

What is the cube root of $37\frac{1}{27}$?

$$37 \times 27 + 1 = \frac{1000}{27}$$

$$\begin{array}{r} 1000 \overline{) 1000} \text{ Ans } 10 \\ 1000 \end{array}$$

$$\begin{array}{r} 27 \overline{) 27} \\ \underline{27} \\ 0 \end{array}$$

What is the cube root $319\frac{17}{210}$?

$$319 \times 210 + 17 = \frac{68921}{210}$$

$$\begin{array}{r} 68921 \overline{) 68921} \text{ Ans } 41 \\ 64 \\ 4800 \overline{) 4921} \text{ Resolvend} \\ \underline{4800} \\ 121 \\ 4921 \text{ Subtrahend} \end{array}$$

$$\begin{array}{r} 210 \overline{) 210} \\ \underline{210} \\ 0 \end{array}$$

If the fraction be a surd, reduce it to a decimal, and then extract the root.

What is the Cube root of $\frac{6}{7}$!

$$7) 6000.000000 (857142857.$$

$$\begin{array}{r} 56 \\ \hline 40 \\ 35 \\ \hline 50 \\ 49 \\ \hline 10 \\ 7 \\ \hline 30 \\ 28 \\ \hline 20 \\ 14 \\ \hline 60 \\ 56 \\ \hline 40 \\ 35 \\ \hline 50 \\ 49 \\ \hline 10 \end{array}$$

$$857142857 (949+$$

$$\begin{array}{r} 24300) 729 \\ \hline 128142 \\ 97200 \\ \hline 4384 \\ 101584 \end{array}$$

$$\begin{array}{r} 2550800) 20558857 \\ \hline 22957200 \\ \hline 1197999 \\ 23076999 \\ \hline 3481858 \end{array}$$

11

Extraction of the Biquadrate Root.

To extract the biquadrate Root is to find out a number which being involved four times into itself, will produce the given number.

Rule. First extract the square root of the given number, then extract the square root of that square root, and it will give the biquadrate root required.

What is the biquadrate root of 27? What is the biquadrate root of 76?

3. 27
 27
 189
 54
 129
 27
 5103
 1458
 19683
 27
 137781
 39366
 531441 Ans

 76
 76
 456
 532
 5776
 76
 34656
 40432
 438976
 76
 2633856
 3072832
 33362176 Ans

What is the biquadrate root of 531441? What is the biquadrate root of 33362176?

 531441 (729
 49
 142) 414
 284
 1449) 13041
 13041
 129 (27
 4
 47) 329
 326

 33362176 (5776
 25
 107) 836
 749
 1147) 8721 (146) 876
 8629
 11546) 69276
 69276

Alligation Medial.

Is where the quantities and price of several simples are given to be mixed, to find the mean price of that mixture.

Rule. — As the whole composition: is to its total value :: so is any part of the composition: to the mean price.

A vintner mingles 15 gallons of Canary at 8s per gallon, with 20 gallons at 7s 4d per gallon, 10 gallons of sherry at 6s 8d per gallon, and 24 gallons of white wine at 4s per gallon, what is the worth of a gallon of this mixture?

gall	s	d	
15	×	8	0 = 120 0
20	×	7	4 = 146 8
10	×	6	8 = 66 8
24	×	4	0 = 96 0
90			429 4

As 89	—	429 4	gal
		12	

89	)	5152	(12) 74 2
		483	5 0 2 2

3	2	2
2	7	5
		40

89	)	184	(2
		138	
		46	
		89	

4x 50 - 224

$$7 \times 43 = 301$$

$$\underline{15} \times \underline{37} = \underline{185}$$

10 710

As 16 ————— 710 ————— 2

$$\begin{array}{r} 2 \\ \hline 10 \overline{) 1420} \quad (20) 88 \\ \underline{128} \quad \underline{4.8.9} \text{ Ans} \end{array}$$

140

128

12

$$\begin{array}{r} 12 \\ 10 \overline{) 144} \\ \underline{100} \\ 44 \\ \underline{40} \\ 4 \end{array} \quad \begin{array}{l} (9 \\ \\ \end{array}$$

$$27 \times 5.5 = 148.5$$

27 x 4.0 - 108.0

14 x 2.8 37.4

58 293.10

$$\begin{array}{r} \text{As } 58 \text{ ---} \\ \hline 293.10 \end{array}$$

$$\begin{array}{r} 18 \overline{) 3520} \quad (12) 51 \\ \underline{340} \\ 120 \\ \underline{58} \\ 58 \end{array}$$

$$\begin{array}{r} 4 \\ 58 \overline{) 232} \quad \left(\begin{array}{r} 3 \\ 4 \end{array} \right. \\ \underline{204} \\ 28 \\ \underline{08} \end{array}$$

If 50 Dutch pence be worth 65 french pence,
how many Dutch are equal to 350 French pence?

F. P. D. P. F. Pence
As 65 : 50 :: 350

$$\begin{array}{r} 50 \text{ Dutch Pence} \\ 65 \overline{) 1750.0} \quad \left(269 \frac{15}{65} \right. \\ \underline{130} \end{array}$$

$$\begin{array}{r} 450 \\ \underline{390} \\ 600 \\ \underline{585} \\ 15 \\ \underline{65} \end{array}$$

Ells
49
0
6
3
9
3
5
6
2
7
8
4

If 12 yards at London make 8 ells at Paris,
how many ells at Paris will make 64 yards
at London?

yds ells yds
As 12 : 8 :: 64

$$\begin{array}{r} 8 \text{ Ells} \\ 12 \overline{) 512} \quad \left(42 \frac{8}{12} \right. \\ \underline{48} \\ 32 \\ \underline{24} \\ 8 \\ \underline{12} \end{array}$$

Conjoined Proportion,

When the coin, weight or measures of several countries, are compared in the same question: or it is linking together a variety of proportions. When it is required to find how many of the first sort of coin, weight, or measures, mentioned in the question, are equal to a given quantity of the last.

Rule: Place the numbers alternately, beginning at the left hand, and let the last number stand on the left hand; then multiply the first row continually for a dividend, and the second for a divisor.

Proof. By as many single Rules of Three as the question requires.

If 12 Rs at London make 10 Rs at Amsterdam, 100 Rs at Amsterdam 120 Rs at Thoulouse how many Rs at London are equal to 40 Rs ? at Thoulouse?

Left	Right	
12	10	$12 \times 100 \times 40 = 48000$
100	120	$10 \times 120 = 1200$
40		

$$\begin{array}{r} (1200) \overline{) 48000} (40 \\ \underline{4800} \\ 0 \end{array}$$

If 140 braces at Venice are equal to 156 braces at Leghorn, and 7 braces at Leghorn equal to 4 ells English, how many braces at Venice are equal to 16 ells English?

Left	Right	
140	156	$140 \times 7 \times 16 = 15680$
7	4	$156 \times 4 = 624$
16		

$$\begin{array}{r} (624) \overline{) 15680} (25 \frac{20}{624} \\ \underline{1248} \\ 3200 \\ \underline{3120} \\ 80 \\ \underline{624} \end{array}$$

Home Measure

Arkins 8dy. gal. qt. pt.

4632 " 6 " 3 " 1
 48 " 7 " 3 " 1
 56 " 9 " 0 " 1
 347 " 8 " 2 " 0
 856 " 9 " 0 " 1
 738 " 4 " 3 " 0
 4598 " 6 " 2 " 1
 7321 " 0 " 1 " 1
 8596 " 9 " 3 " 0
 27198 " 3 " 0 " 0
 22565 " 6 " 0 " 1
 27198 " 3 " 0 " 0

Tons. Pipe. Hhd. Galls

493 " 1 " 1 " 49
 864 " 0 " 1 " 50
 999 " 1 " 0 " 46
 854 " 0 " 1 " 43
 368 " 1 " 0 " 49
 252 " 1 " 1 " 53
 462 " 0 " 1 " 45
 498 " 1 " 0 " 46
 973 " 0 " 1 " 54
 5769 " 1 " 0 " 57
 3275 " 1 " 1 " 8
 5769 " 1 " 0 " 57

Long Measure

yd. ft. inc. bar

225 " 1 " 9 " 1
 171 " 0 " 3 " 2
 52 " 2 " 3 " 2
 397 " 0 " 10 " 1
 154 " 2 " 7 " 2
 137 " 1 " 4 " 1
 1139 " 0 " 3 " 0
 913 " 1 " 5 " 2
 1139 " 0 " 3 " 0

lea. m. fur. p.

72 " 2 " 1 " 19
 27 " 1 " 7 " 22
 35 " 2 " 5 " 31
 49 " 0 " 6 " 12
 51 " 1 " 6 " 17
 72 " 0 " 5 " 21
 339 " 1 " 1 " 2
 266 " 1 " 7 " 23
 339 " 1 " 1 " 2

Day. mil. fur. po. 16 in. bar.

217 " 17 " 9 " 19 " 14 " 9 " 1
 733 " 17 " 4 " 16 " 13 " 3 " 2
 283 " 53 " 5 " 19 " 12 " 2 " 2
 346 " 26 " 6 " 23 " 13 " 4 " 1
 189 " 32 " 3 " 27 " 14 " 5 " 2
 176 " 14 " 2 " 15 " 15 " 6 " 2
 921 " 15 " 4 " 18 " 16 " 7 " 1
 464 " 54 " 5 " 36 " 18 " 11 " 1
 459 " 36 " 4 " 22 " 16 " 7 " 2
 732 " 61 " 5 " 19 " 15 " 6 " 2
 4524 " 53 " 2 " 22 " 15 " 5 " 1

mil. fur. po. yd. ft.

876 " 7 " 13 " 4 " 2
 129 " 6 " 26 " 2 " 1
 167 " 4 " 19 " 3 " 2
 157 " 3 " 15 " 2 " 2
 286 " 2 " 27 " 1 " 1
 194 " 5 " 32 " 2 " 2
 176 " 4 " 18 " 5 " 2
 99 " 6 " 39 " 4 " 1
 8 " 7 " 26 " 5 " 2
 5 " 4 " 25 " 3 " 1
 2108 " 5 " 33 " 0 " 0

Troy Weight

lb. 3 3 3 3 3
 52 " 10 " 6 " 2 " 16
 48 " 11 " 7 " 1 " 18
 54 " 9 " 5 " 2 " 14
 85 " 10 " 6 " 0 " 15
 94 " 9 " 7 " 1 " 14
 86 " 10 " 4 " 1 " 19
 74 " 1 " 0 " 0 " 4
 501 " 4 " 7 " 0 " 0
 448 " 6 " 0 " 0 " 4
 501 " 4 " 7 " 0 " 0

lb 3 3 3 3 3
 464 " 10 " 7 " 2 " 18
 72 " 11 " 6 " 1 " 19
 54 " 9 " 4 " 0 " 14
 69 " 10 " 7 " 2 " 18
 567 " 9 " 4 " 0 " 14
 432 " 10 " 5 " 1 " 17
 94 " 11 " 7 " 0 " 16
 56 " 8 " 2 " 1 " 14
 1814 " 11 " 6 " 1 " 10
 1350 " 0 " 6 " 1 " 12
 1814 " 11 " 6 " 1 " 10

Cwt 2nd lbs Oz
 218 " 3 " 20 " 14
 563 " 2 " 19 " 15
 92 " 1 " 14 " 13
 84 " 0 " 25 " 15
 976 " 1 " 23 " 14
 843 " 0 " 25 " 15
 365 " 1 " 24 " 13
 489 " 3 " 27 " 16
 18 " 0 " 14 " 13
 3852 " 2 " 3 " 0
 3483 " 2 " 10 " 2
 3852 " 2 " 3 " 0

Long Cwt 2nd lbs Oz Des
 56 " 19 " 3 " 27 " 14 " 15
 42 " 18 " 2 " 24 " 13 " 12
 57 " 16 " 1 " 25 " 15 " 10
 23 " 15 " 2 " 23 " 14 " 15
 54 " 10 " 0 " 22 " 13 " 14
 56 " 4 " 3 " 18 " 15 " 13
 98 " 3 " 0 " 14 " 10 " 12
 107 " 12 " 2 " 16 " 11 " 10
 111 " 10 " 1 " 23 " 0 " 8
 629 " 12 " 1 " 2 " 15 " 13
 572 " 12 " 1 " 3 " 0 " 14
 629 " 12 " 1 " 2 " 15 " 13

Hay and Straw Measure

lb. lbs. lbs.
 543 " 24 " 40
 98 " 32 " 59
 24 " 31 " 46
 694 " 34 " 51
 3 " 6 " 4
 2 " 4 " 54
 984 " 35 " 32
 732 " 20 " 18
 48 " 35 " 31
 67 " 30 " 00
 3169 " 5 " 43
 2625 " 16 " 55
 3169 " 5 " 43

Land. 51. lbs
 784 " 32 " 24
 67 " 34 " 25
 48 " 33 " 21
 94 " 21 " 26
 41 " 34 " 54
 63 " 10 " 8
 375 " 4 " 9
 842 " 5 " 14
 68 " 16 " 19
 2390 " 17 " 10
 1605 " 20 " 22
 2390 " 17 " 10

Case 3rd

If the number be above 20 and be found in the Multiplication Table, multiply by each of the two numbers which make it.

Multiply 847208 by 24
 $6 \times 4 = 24$

$$\begin{array}{r} 5083248 \\ 4 \\ \hline 20332992 \end{array}$$

7360124 by 28
 $4 \times 7 = 28$

$$\begin{array}{r} 29440496 \\ 7 \\ \hline 206083472 \end{array}$$

// 452903 by 48
 $6 \times 8 = 48$

$$\begin{array}{r} 2717416 \\ 8 \\ \hline 21739248 \end{array}$$

37284631 by 96
 $2 \times 8 = 96$

$$\begin{array}{r} 74569262 \\ 8 \\ \hline 596554096 \end{array}$$

44208452 by 132
 $12 \times 11 = 132$

$$\begin{array}{r} 890501424 \\ 11 \\ \hline 9795515664 \end{array}$$

50070841 by 144
 12×12

$$\begin{array}{r} 600850092 \\ 12 \\ \hline 7210201104 \end{array}$$

Case 4th

When the multiplier is above 20 and not the product of any two numbers under 12, multiply by the unit figure of the multiplier, as in case 1; then multiply by the figure which stands next to the unit, and so with each in succession, taking care to place the first figure in each line under the figure by which you multiply.

$$\begin{array}{r}
 5241 \\
 375 \\
 \hline
 26205 \\
 36687 \\
 15723 \\
 \hline
 1965375
 \end{array}$$

$$\begin{array}{r}
 \text{Proof. } 7385264 \\
 765 \\
 \hline
 800 \quad 36926320 \\
 800 \quad 44311584 \\
 \hline
 51696848 \\
 \hline
 5649726960
 \end{array}$$

$$\begin{array}{r}
 97638706 \\
 8658 \\
 \hline
 781109648 \\
 488193530 \\
 585832236 \\
 781109648 \\
 \hline
 845355916548
 \end{array}$$

$$\begin{array}{r}
 36208475 \\
 1324 \\
 \hline
 144833900 \\
 72416950 \\
 108625425 \\
 36208475 \\
 \hline
 47940020900
 \end{array}$$

$$\begin{array}{r}
 702315079 \\
 640065 \\
 \hline
 351175395 \\
 421410474 \\
 280940316 \\
 421410474 \\
 \hline
 44955015840135
 \end{array}$$

$$\begin{array}{r}
 10370156 \\
 45063 \\
 \hline
 31110468 \\
 62220936 \\
 51850780 \\
 41480624 \\
 \hline
 467310339828
 \end{array}$$

$$\begin{array}{r}
 239487635 \\
 700956 \\
 \hline
 1436925810 \\
 1197438175 \\
 2155388715 \\
 \hline
 1676413445 \\
 167870294679060
 \end{array}$$

$$\begin{array}{r}
 38470306540 \\
 900370500 \\
 \hline
 19235153270000 \\
 26929214578 \\
 11541091962 \\
 34623275886 \\
 \hline
 34637529134573070000
 \end{array}$$

In 360 pence as many farthings and guineas, how many number of ancient gold silver crowns and pounds, and of each an equal number?

£	s	
1	5	360
20	12	4
20	80	
12	4	1440
240	240	
4	960	
960	1200	

360
21
360
720
7560
12
90720
4
362880
1440
360
1200
364680
303 X 1080

A labourer dug up an equal number of ancient gold silver and copper coins; each gold coin was worth 22 s. 6d. each silver one 3 s. 9d. and each copper one 1d. the value of the whole was £65. 16s. 8d. how many were there of each sort?

s. d.	£ s. d.
22 " 6	65 " 16 " 8
3 " 9	20
1	13 16
26 " 4	12
12 316	1580 0 / 50
316	1580

In a public school half the boys wrote in copy books, and paid 3d. each per week, 99 paid 2d. each per week, and 59 paid 1d. how many did the school contain and what was the

A gentleman meeting a number weekly receipt?

of poor people, divided among them	59	99	99
the contents of his purse: to every	1	2	59
man he gave half a crown, to every	59	198	158
woman half as much, and to			2
every child 3d. the number of each	158		316 Boys
was equal, and the whole bounty	3		
amounted to £5. 8s. how many	474		474
did he relieve?			198

30	£ s.
15	5 " 8
3	20
48	108
	12
	1296 (27
	96 (3
	336 81
	336

59
12 731
240 8-11
3-11

Troy Weight

In 17 lbs of gold how many grains?

$$\begin{array}{r}
 17 \\
 12 \\
 \hline
 204 \\
 20 \\
 \hline
 4080 \\
 24 \\
 \hline
 16320 \\
 8160 \\
 \hline
 97920
 \end{array}$$

In a silver tea pot weighing 15 ozs 10 dwts how many grains?

$$\begin{array}{r}
 15 \text{ ozs } 10 \text{ dwts} \\
 20 \\
 \hline
 310 \\
 24 \\
 \hline
 1240 \\
 820 \\
 \hline
 7440
 \end{array}$$

Required the quantity of gold to make 7 watch cases, each weighing 10 ozs. 18 grs. and 9 others of 10z. 10 dwts. each?

In 18 ingots of silver, each weighing 6 lbs. 10 ozs. 17 dwts. and 8 ingots each weighing 7 lbs. 2 ozs. 18 grs. how many dwts?

	lbs.	ozs.	dwt.	grs.
	6	10	17	0
7 " 2 " 0 " 18			9	
6	62	1	13	0
43 " 0 " 4 " 12			2	
	124	3	6	0
	43	0	4	12
	167	3	10	12
	12			
	200	7		
	20			
	401	50		

	ozs.	dwt.	grs.
	1	10	0
	9		
	13	10	0
	7	5	6
	20	15	6

	ozs.	dwt.	grs.
	1	0	18
	7		
	7	5	6

Air-dupose Weight

In 9 cwt. 3 qrs. 14 lbs. 8 oz. How many tons in 4720681
How many drams? ozs?

cwt. qrs. lbs. oz.
9 " 3 " 14 " 8
4
39
28
328
781
1108
16
6644
1108
17704
16
106224
17704
283264

In 9 great pounds of silk
each 24 ozs. how many drams?

9
24
216
16
1296
216
3456

35840) 4720681 (131 tons.
35840
113668
107520
61481
35840
1025641
28 1602 = 9
4 57 = 8
14 = 1

How many parcels, each weighing
2 lbs. 10 ozs. 13 drs. are there in
14 cwt?

lbs. oz. drs.	cwt.
2 " 10 " 13	14
<u>16</u>	<u>4</u>
42	58
<u>16</u>	<u>28</u>
255	448
<u>431</u>	<u>112</u>
885	1568
	<u>16</u>

9408
1568
25088
16
150528
25088
685) 401408 (585 X
3425
5890
5480
4108
3425
683

Apothecaries Weight.

In 21880 grains how many pounds?

$$\begin{array}{r}
 21880 \\
 3 \overline{) 1094} \\
 8 \cdot 364 - 2 \\
 12 \cdot 45 - 4 \\
 \hline
 3 - 9 \cdot 4 - 2
 \end{array}$$

How many packages of 10 ℥. are there in 56 lbs. of bark?

$$\begin{array}{r}
 \text{lbs.} \\
 56 \\
 3 \overline{) 12} \\
 10 \overline{) 672} \quad 67X \\
 \hline
 60 \\
 \hline
 72 \\
 70 \\
 \hline
 2
 \end{array}$$

Required the difference in grains between 7 parcels, each weighing 4 lb. 7 ℥. 33 and 2 dozen of 11 ℥. 63. 23. each?

$$\begin{array}{r}
 \text{lbs. } 3 \cdot 3 \cdot 3 \\
 0 \cdot 11 \cdot 6 \cdot 2 \text{ by } 24 \\
 \hline
 8 \times 4 = 24 \\
 5 \cdot 11 \cdot 0 \cdot 0 \\
 \hline
 4 \\
 \hline
 23 \cdot 8 \cdot 0 \cdot 0
 \end{array}$$

In 3 lb. 9 ℥. 43. 23 how many grains?

$$\begin{array}{r}
 3 \cdot 3 \cdot 3 \\
 3 \cdot 9 \cdot 4 \cdot 2 \\
 \hline
 12 \\
 45 \\
 \hline
 8 \\
 354 \\
 \hline
 3 \\
 1094 \\
 \hline
 20 \\
 \hline
 21880
 \end{array}$$

$$\begin{array}{r}
 \text{lbs. } 3 \cdot 3 \cdot 3 \\
 4 \cdot 7 \cdot 3 \cdot 0 \\
 \hline
 7 \\
 32 \cdot 3 \cdot 5 \cdot 0 \\
 23 \cdot 8 \cdot 0 \cdot 0 \\
 \hline
 8 \cdot 7 \cdot 5 \cdot 0 \\
 \hline
 12 \\
 103 \\
 \hline
 8 \\
 829 \\
 \hline
 3 \\
 2487 \\
 \hline
 20 \\
 \hline
 \text{Ans } 49740
 \end{array}$$

Cloth Measure.

In 784 nails how many inches?

$$\begin{array}{r} \frac{1}{4}) 784 \\ \underline{2 \frac{1}{4}} \\ 1528 \\ \underline{191} \\ 1719 \end{array}$$

In 29 pieces of holland, each containing 36 ells Flemish how many yards?

$$\begin{array}{r} 36 \\ \underline{29} \\ 324 \\ \underline{72} \\ 1044 \end{array}$$

$$\begin{array}{r} 3 \\ \underline{4) 3132} \\ \text{ctns. } 783 \end{array}$$

In 7591 yards how many French ells?

$$\begin{array}{r} 7591 \\ \underline{4} \\ 6) 30364 \\ \underline{5060} \end{array}$$

In a piece of linen measuring 21 English ells how many shirts can be cut of $3 \frac{3}{4}$ yards each?

$$\begin{array}{r} \text{E. ells} \\ 21 \\ \underline{5} \\ 3 \frac{3}{4} \\ \underline{4 \frac{1}{4}} 105 \end{array}$$

Long Measure.

In 97 miles how many inches?

$$\begin{array}{r} \text{mils} \\ 97 \\ \underline{8} \\ 178 \\ \underline{40} \\ \frac{1}{2}) 31040 \\ \underline{5 \frac{1}{2}} \\ 155200 \\ \underline{15520} \\ 170720 \\ \underline{3} \\ 512180 \\ \underline{12} \\ 8145920 \end{array}$$

In 8145920 inches how many miles?

$$\begin{array}{r} \text{inches} \\ 12) 8145920 \\ \underline{3) 512180} \\ 1760) 170720 (97 \\ \underline{15840} \\ 12320 \\ \underline{12320} \end{array}$$

Land Measure.

In 123 acres how many perches?

$$\begin{array}{r}
 \text{acres} \\
 123 \\
 \underline{4} \\
 492 \\
 \underline{40} \\
 19680
 \end{array}$$

In 19680 perches how many acres?

$$\begin{array}{r}
 40 \overline{) 19680} \\
 \underline{4} 92 \\
 123
 \end{array}$$

How many gardens of 16 poles each 7 acres, 20 cottagers 4 yards each, can be made from a field of 8 acres?

$$\begin{array}{r}
 \text{acres} \\
 8 \\
 \underline{4} \\
 32 \\
 \underline{40} \\
 4 \overline{) 1280} \\
 \underline{304} \\
 38400 \\
 \underline{320} \\
 41500 \text{ (49+)} \\
 3888 \\
 \underline{4920} \\
 4716 \\
 \underline{204}
 \end{array}$$

$$\begin{array}{r}
 \text{poles yds} \\
 4 \overline{) 16} \text{ " } 4 \\
 \underline{304} \\
 484 \\
 \underline{4} \\
 524
 \end{array}$$

Three small farmers had 3 roads 29 poles were occupied by 24 poor labourers, what was the whole content in perches?

$$\begin{array}{r}
 \text{a r. po.} \\
 7 \cdot 0 \cdot 0 \\
 \underline{3} \\
 21 \cdot 0 \cdot 0 \\
 \text{a r.} \\
 1 \cdot 2 \text{ by } 20 \\
 \underline{10 \times 2 = 20} \\
 15 \cdot 0 \\
 \underline{2} \\
 30 \cdot 0 \\
 21 \cdot 0 \cdot 0 \\
 19 \cdot 3 \cdot 29 \\
 \underline{70 \cdot 3 \cdot 29} \\
 4 \\
 283 \\
 \underline{40} \\
 \text{Ans. } 11,349 \text{ perches}
 \end{array}$$

Ale and Beer Measure

In 418 hogsheads of porter how many punts?
 How many punts in 884 butts?

$$\begin{array}{r}
 \text{hhd.} \\
 \frac{1}{2}) 418 \\
 \underline{1\frac{1}{2}} \\
 418 \\
 208 \\
 \underline{824} \\
 2 \\
 1248 \\
 2 \\
 \underline{2496} \\
 9 \\
 22484 \\
 4 \\
 \underline{89858} \\
 2
 \end{array}$$

Ans. 179712

$$\begin{array}{r}
 \text{butts.} \\
 884 \\
 2 \\
 \frac{1}{2}) 1728 \\
 \underline{1\frac{1}{2}} \\
 1728 \\
 884 \\
 \underline{2592} \\
 2 \\
 5184 \\
 2 \\
 10368 \\
 9 \\
 93312 \\
 4 \\
 373248 \\
 2
 \end{array}$$

Ans. 746496

How many Kilderkins, in 843 butts?

$$\begin{array}{r}
 \text{butts.} \\
 843 \\
 2 \\
 \frac{1}{2}) 1686 \\
 \underline{1\frac{1}{2}} \\
 1686 \\
 843 \\
 \underline{2529} \\
 2
 \end{array}$$

Ans. 5058

In 300 barrels, how many hogsheads?

$$\begin{array}{r}
 \text{Barre} \\
 300 \\
 2 \\
 3) 600 \\
 \underline{Ans. 200}
 \end{array}$$

Dry Measure.

In 276 quarters of corn how many pecks? In 3 lasts of barley, how many pints?

276
2
 552
2
 1104
2
 2208
4

Ans 8832 pecks

How many horses would
 7 lasts of oats feed, allow-
 ing half a peck to each?

Lasts
 7
2
 14
5
 70
2
 140
2
 280
2
 560
4
 2240
2

Ans 4480

Last.
 3
2
 6
5
 30
2
 60
2
 120
2

240
4
 960
2
 1920
4
 7680
2

Ans 15360

How long will 10 tons of
 coals suffice for 3 fires
 of which each burns 20
 pounds daily?

tons
 10
20
 200
4
 800
28

8400
 1600
20 22400
3 1120

Ans 373 $\frac{1}{3}$

Time Measure

In 7 years how many hours? In 10 yrs 3 mo. 21 ds.
how many hours?

$$\begin{array}{r}
 \text{yrs} \\
 7 \\
 \hline
 365 \\
 2555 \\
 \hline
 24 \\
 \hline
 10228 \\
 5110 \\
 \hline
 81328
 \end{array}$$

$$\begin{array}{r}
 \text{yrs} \quad \text{mo.} \quad \text{ds} \\
 10 \quad 3 \quad 21 \\
 \hline
 12 \\
 \hline
 123 \\
 \hline
 30 \\
 \hline
 3711 \\
 24 \\
 \hline
 14844 \\
 7422 \\
 \hline
 89064
 \end{array}$$

From the birth of our Saviour to the end of the year
1832, how many seconds?

$$\begin{array}{r}
 1832 \\
 \hline
 12 \\
 \hline
 21984 \\
 \hline
 4 \\
 \hline
 87936 \\
 7 \\
 \hline
 815552 \\
 \hline
 24 \\
 \hline
 2482208 \\
 1231104 \\
 \hline
 14773248 \\
 60 \\
 \hline
 885394880 \\
 60 \\
 \hline
 53183892800
 \end{array}$$

Duodecimals.

A foot is divided into 12 parts, called inches (in), each inch into 12 parts, called seconds (") each second into 12 parts, called thirds (""), and each third into 12 parts, called fourths (""), according to the following table:—

12 fourths ("") make 1 third.

12 thirds ("") make 1 second.

12 seconds (") make 1 inch.

12 inches make 1 foot.

Rule.—Write the given numbers as in Addition, Multiply the lowest name of the multiplicand, by the highest name of the multiplier, then by the next lower names in succession, and add the products together.

Multiply 24 ft. 4 in by 7 ft. 9 in.

$$\begin{array}{r}
 \text{ft. in} \\
 29 \cdot 4 \\
 7 \cdot 9 \\
 \hline
 205 \cdot 4 \\
 22 \cdot 0 \cdot 0'' \\
 \hline
 227 \cdot 4 \cdot 0''
 \end{array}$$

Multiply 14 ft. 3 in 6'' by 5 ft. 4 in.

$$\begin{array}{r}
 \text{ft. in. ''} \\
 14 \cdot 3 \cdot 6 \\
 5 \cdot 4 \\
 \hline
 71 \cdot 5 \cdot 6 \\
 4 \cdot 9 \cdot 2 \\
 \hline
 75 \cdot 2 \cdot 8
 \end{array}$$

Multiply 18 ft. 5 in 3'' by 6 ft. 3 in. 8'''

$$\begin{array}{r}
 \text{ft. in. ''} \\
 18 \cdot 5 \cdot 3 \\
 6 \cdot 3 \cdot 8 \\
 \hline
 110 \cdot 7 \cdot 6 \\
 4 \cdot 7 \cdot 3 \cdot 9 \\
 \hline
 112 \cdot 3 \cdot 8 \cdot 0 \\
 \hline
 116 \cdot 3 \cdot 1 \cdot 3 \cdot 0
 \end{array}$$

Multiply 9 ft. 5 in. 7'' by 7 ft. 4 in 10'''

$$\begin{array}{r}
 \text{ft. in. ''} \\
 9 \cdot 5 \cdot 7 \\
 7 \cdot 4 \cdot 10 \\
 \hline
 85 \cdot 3 \cdot 1 \\
 3 \cdot 1 \cdot 10 \cdot 4 \\
 \hline
 7 \cdot 10 \cdot 7 \cdot 10 \\
 \hline
 70 \cdot 0 \cdot 9 \cdot 11 \cdot 10
 \end{array}$$

Rule of Three Direct.

Rule:— Put in the Third place that term which is of the same kind as the answer.

If the answer is to be greater than the third term place the greatest of the remaining terms in the Second place; If the answer is to be less than the third term, put the least terms in the Second place.

Put the remaining term in the First place.

Multiply the second and third terms together, and divide by the first.

Rule of Three Dist.

Teacheth by three numbers given to find a fourth, in such proportion to the third as the second is to the first.

Rule:— First state the question, that is, place the numbers in such order, that the first and third be of one kind, and the second the same as the number required; then bring the first and third numbers into one name, and the second into the lowest term mentioned. Multiply the second and third numbers together, and divide the product by the first, the quotient will be the answer to the question in the same denomination as you left the second number in.

At $10\frac{1}{2}$ d. per £ what is the value of 7 cheeses, each weighing 26 lb. 11 ozs. ?

$ \begin{array}{r} 135 \\ 128 \\ \hline 73 \\ 154 \\ \hline 98 \\ 96 \\ \hline 2 \\ 8 \end{array} $	$ \begin{array}{r} 10\frac{1}{2} \\ 16 \\ \hline 164 \end{array} $	$ \begin{array}{r} 26 \cdot 11 \\ 7 \\ \hline 186 \cdot 13 \\ 16 \\ \hline 1119 \\ 187 \\ \hline 2989 \\ 42 \\ \hline 5978 \\ 11956 \\ 125538 \\ 112 \\ \hline 135 \end{array} $	$ \begin{array}{r} 4) 4846 \\ 12) 1961\frac{1}{2} \\ 20) 163\frac{5}{8} \\ \hline \text{£ } 8 \cdot 3 \cdot 5\frac{1}{2} \end{array} $
---	---	---	--

How many yards of cloth can I have for 402 £. 5 s. if 6 yards cost £1. 8 s. 8 d. ?

$$\begin{array}{r} \text{£. s. d.} \\ \text{If } 1.8.8 \text{ ————— } 6 \text{ —————} \\ \quad 20 \\ \quad 28 \\ \quad 12 \\ \hline \underline{\underline{344}} \end{array}$$

$$\begin{array}{r} \text{£. s.} \\ 402.5 \\ \quad 20 \\ \quad 8045 \\ \quad 12 \\ \hline \end{array}$$

$$96540$$

$$\begin{array}{r} \text{yds. grs. nl.} \\ 344 \overline{) 579240} \quad (1083.3.1 \\ \underline{344} \end{array}$$

$$2352$$

$$2084$$

$$2884$$

$$2752$$

$$1320$$

$$1032$$

$$288$$

$$4$$

$$344 \overline{) 1152} \quad (3$$

$$1032$$

$$120$$

$$344 \overline{) 480} \quad (1$$

$$344$$

$$136$$

If 1 lb. of sugar cost 7 1/2 d. what will 10 cwt. 2 grs. 16 lbs. come to?

$$\begin{array}{r} \text{lb.} \\ \text{If } 1 \text{ ————— } 7 \frac{1}{2} \text{ —————} \\ \quad 4 \\ \quad 30 \end{array}$$

$$\begin{array}{r} \text{cwt. grs. lbs.} \\ 10.2.16 \end{array}$$

$$4$$

$$42$$

$$28$$

$$342$$

$$85$$

$$1192$$

$$30$$

$$4 \overline{) 35760}$$

$$12 \overline{) 8940}$$

$$20 \overline{) 745}$$

$$\underline{\underline{£ 37.5s.}}$$

71. A draper bought 20 peices of cloth, each of 36 yards, at £3. 15s. for 6 yards, what was the cost?

$$\begin{array}{r}
 \text{yds} \quad \text{£. s.} \quad \text{20 by 36} \\
 345 \text{ --- } 3.15 \text{ --- } 36 \\
 \quad \quad 20 \quad \quad 36 \\
 \quad \quad 75 \quad \quad 720 \\
 \quad \quad 720 \quad \quad \text{---} \\
 \quad \quad 1500 \\
 \quad 525 \\
 5) 54000 \\
 20) 9000 \\
 \quad 450
 \end{array}$$

3. If an ounce of fine gold is sold for £3. 10s. what will 15 ingots come to, each weighing 14 lbs. 7 ozs. 3 dwts. 17 grs.

$$\begin{array}{r}
 \text{lb.} \quad \text{£. s.} \quad \text{lb. of dwt. grs.} \\
 341 \text{ --- } 3.10 \text{ --- } 218.11.15.15 \\
 \quad 20 \quad \quad 20 \quad \quad 12 \\
 \quad 20 \quad \quad 70 \quad \quad 2527 \\
 \quad 24 \quad \quad \quad \quad 20 \\
 \quad 80 \quad \quad 52555 \\
 \quad 40 \quad \quad 24 \\
 \quad 480 \quad \quad 210225 \\
 \quad \quad 105111 \\
 \quad \quad 1251335 \\
 480) 88293450 \quad \left(\begin{array}{l} 20) 183944 \\ \text{£. } 9.197.45.8\frac{1}{4}d. \end{array} \right. \\
 \quad 480 \\
 \quad 4029 \\
 \quad 3840 \\
 \quad 1893 \\
 \quad 1440 \\
 \quad 4534 \\
 \quad 4320 \\
 \quad 2145 \\
 \quad 1920 \\
 \quad 2250 \\
 \quad 1920 \\
 \quad 330 \\
 \quad 12 \\
 480) 3960(8 \\
 \quad 3840 \\
 \quad 120 \\
 \quad 4 \\
 480) 480(\frac{1}{4} \\
 \quad 480 \\
 \quad . . .
 \end{array}$$

How hogsheads of sugar each weighing 7 cwt. 3 qrs.
27 lbs. at £3. 10s. 10½ d. per cwt.?

cwt	£ s d.	cwt qrs. lbs.
1	3. 10. 10½	39. 3. 23
4	20	4
4	70	159
28	12	28
112	850	1275

4	320
3402	4475
	3402
	8950

17900
13425

112) 15223950

112
402
336

583
580

1039
1008

315

224

910

896

14

4) 135928

12) 33982

20) 283110

£141. 11s. 10d.

If 4 lbs of soap cost 1s. 7d. what cost 23 lbs?

lbs.	s d.	lbs
4	1. 7	23
	12	19
19		207
		23

4) 437

12) 109¼

9s 1¼ d.

If 14 yards of cloth cost 16s. 9 $\frac{3}{4}$ d. what will 48 $\frac{1}{2}$ yards cost?

yds	s	d	yds	grs
If 14	16	9 $\frac{3}{4}$	48	2
4	12		4	
56	201		194	
	4		807	
807				

3228

7263

807

56) 156558

112

445

392

535

504

318

280

38

(4) 2795

(12) 898 $\frac{3}{4}$

(20) 58 $\frac{1}{2}$

£ 2.18s. 2 $\frac{3}{4}$ d.

If 3 lbs of tobacco cost 11s. 5d. what will 14 tons 17 cwt 3 grs come to?

lbs	s	d	ton	cwt	grs
If 3	11	5	14	17	3
	12		20		
137			297		

4

1191

28

9528

2382

33348

137

233436

100044

33348

3) 4568676

12) 1522892

20) 126907 $\frac{1}{2}$

£ 5345.17s. 8d

Simple

Addition

This Rule teaches to find the sum total
of any simple Numbers

Rule

Add the Units, or right hand figures together.
set down under them all above every 10's and
add or carry the 10's as one to the second line.
Proceed in the same manner with the other lines.

Examples

123
321
435
536
637
718
906
777
879
<u>5332</u>

1756
2423
9542
7666
3741
1889
3947
1168
2244
<u>34876</u>

314678
422336
733244
976521
553211
607043
976632
464856
849414
<u>5894945</u>

9423178
 7644133
 3035566
 7972332
 1231147
 3308808
 5554442
 4446667
 9019408

 51635681

987654321
 123456789
 " 46644223
 " " 7422438
 " " " 911556
 " " " " 7664
 " 36224777
 " 7663114
 " " 764668

 1210849550

Questions

John Thomas and Harry af-
 ter counting their preze mo-
 ney, John had one thousand &
 hundred & seventy five Dollars
 Thomas had just three times
 as many as John; and Har-
 ry had just as many as John
 and Thomas both; pray how ma-
 ny Dollars had Harry?

1375
 1375
 1375
 1375

 5500 Ans

How much money are in
 six bags containing each
 37542 Dollars?

37542
 37542
 37542
 37542
 37542
 37542

 225252 Ans

If one quarter of a Ship's
 cargo be worth Eleven thou-
 sand and ninety nine dollars;
 how many Dollars is the
 whole cargo worth?

11099
 11099
 11099
 11099

 44396 Ans

Required the sum of the following
 Numbers Viz.

Five hundred and fifty eight
 8 thousand 8 hundred and five
 79 thousand six hundred
 Nine hundred & 11 thousand
 Nine Millions & twenty six

568
 8805
 79600
 911000
 9000026

 9999999 Ans

Simple Subtraction

Teaches to find the difference between two Numbers

Rule— Take the number in the units' place in the lower line from the units of the upper line, and set down the difference under it. Proceed in like manner with each of the other figures in turn. If the upper number should be less than the lower add ten to the top figure, and subtract as before, taking care to add one to the next figure in the lower line.

Examples

$$\begin{array}{r} 1) \quad 32468 \\ \quad 21346 \\ \hline \quad 11122 \\ \hline \quad 32468 \end{array}$$

$$\begin{array}{r} 2) \quad 3642157 \\ \quad 2462148 \\ \hline \quad 1180009 \\ \hline \quad 3642157 \end{array}$$

$$\begin{array}{r} 3) \quad 8796473 \\ \quad 2864789 \\ \hline \quad 5931686 \\ \hline \quad 8796473 \end{array}$$

$$\begin{array}{r} 4) \quad 41678839 \\ \quad 9124386 \\ \hline \quad 32554453 \\ \hline \quad 41678839 \end{array}$$

$$\begin{array}{r} 5) \quad 918764520 \\ \quad 329793098 \\ \hline \quad 588971422 \\ \hline \end{array}$$

$$\begin{array}{r} 6) \quad 432167890 \\ \quad 129793098 \\ \hline \quad 302374792 \\ \hline \end{array}$$

$$\begin{array}{r} 7) \quad 48296717 \\ \quad 23988479 \\ \hline \quad 24308238 \\ \hline \end{array}$$

$$\begin{array}{r} 8) \quad 500870080 \\ \quad 300900090 \\ \hline \quad 199969990 \\ \hline \end{array}$$

$$\begin{array}{r} 9) \quad 684273849 \\ \quad 679428009 \\ \hline \quad 4845840 \\ \hline \end{array}$$

$$\begin{array}{r} 10) \quad 1000000 \\ \quad 765321 \\ \hline \quad 234679 \\ \hline \end{array}$$

$$\begin{array}{r} 11) \quad 200000000 \\ \quad 99999999 \\ \hline \quad 100000001 \\ \hline \end{array}$$

$$\begin{array}{r} 12) \quad 10000 \\ \quad \dots 1 \\ \hline \quad 9999 \\ \hline \end{array}$$

Questions

If an apricot tree had 74
apricots on it and the wind
blew off two dozen how many
were left?

$$\begin{array}{r} 74 \\ - 24 \\ \hline \text{Ans } 50 \end{array}$$

How old, this year is one
born in the year 1815

$$\begin{array}{r} 1846 \\ - 1815 \\ \hline \text{Ans } 31 \text{ years} \end{array}$$

A boy had 375 nuts, he gave
45 to his brother 19 to his sis-
ter three score to his cousin
the monkey stole 85 and the
squirrel eat 28; how many
had he left?

$$\begin{array}{r} 375 \\ - 45 \\ - 19 \\ - 60 \\ - 85 \\ - 28 \\ \hline \text{Ans } 108 \end{array}$$

A butcher had a bullock
which weighed 800 lb 2 sheep
one weighing 130 lb the other
95 lb calves weighing 159 lb
each 3 pigs 137 lb each what
was the gross weight of the whole

$$\text{Ans } 1757 \text{ lb}$$

A man had to travel 640
miles, and rode 240, how
far was he then from the
end of his journey?

$$\begin{array}{r} 640 \\ - 240 \\ \hline 400 \end{array}$$

How long is it since
the revolution of 1688?

$$\begin{array}{r} 1846 \\ - 1688 \\ \hline \text{Ans } 158 \text{ years} \end{array}$$

A merchant bought 725 pipes
of wine for \$90846, and
sold 543 pipes thereof for
\$89049; how many pipes
has he remaining and what
do they stand him in?

$$\begin{array}{r} 90846 \\ - 89049 \\ \hline 1797 \end{array}$$

Ans he had 178 pipes remain-
ing - and they stand him in
1797 \$

A gentleman left £3200
to his widow £1500 to his
eldest son £2000 to his sec-
ond son and 1225 to his daughter
what was the whole amount
left

$$\begin{array}{r} 3200 \\ + 1500 \\ + 2000 \\ + 1225 \\ \hline \text{Ans } 2184 \end{array}$$

$$\begin{array}{r}
 32 \\
 \underline{24} \\
 87 \\
 \underline{72} \\
 159 \\
 \underline{144} \\
 150 \\
 \underline{144} \\
 60 \\
 \underline{48} \\
 \underline{12 = \frac{1}{2}}
 \end{array}$$

$$\begin{array}{r}
 16 \overline{) 2813662} \quad (175853 \\
 \underline{16} \\
 121 \\
 \underline{112} \\
 93 \\
 \underline{80} \\
 136 \\
 \underline{128} \\
 86 \\
 \underline{80} \\
 62 \\
 \underline{48} \\
 \underline{14}
 \end{array}$$

$$\begin{array}{r}
 20 \overline{) 175853} \\
 \text{Ans.} \quad \text{Gulden. } \underline{\underline{8792 \cdot 13 \cdot 14 \frac{1}{2} \text{ pennings}}}
 \end{array}$$

To convert Bank Money into current and the contrary.
 Note. The Bank Money is worth more than the current.
 The difference is called agio, and is generally from 3 to 6 percent. in favour of the Bank.

To change Bank into Current Money.

Rule. As 100 guilders Bank: is to 100 with the agio added :: so is the Bank given: to the current required.

71

To change Current Money into Bank.

Rule: - As 100 with the agio added: is to 100 Bank :: so is the current money given: to the Bank required.

71

Change 794 guilders 15 stivers, current money into Bank florins, agio $4\frac{3}{8}$ per cent?

3

Gulds.	stivers.	pens.	flor.	Gulds.	stivers
As	104	7	8	:	100
	20			:	794
	2087				15
	16				20
	12530				15895
	2087				16
	33400				95370
					15895
					254320

33400	)	25432000	(	100	Gulds.	stivers.	pens.
		233800			761	8	11
		205200					147
		200400					167
		48000					
		33400					
		14600					

33400	)	292000	(	20	stivers
		267200			8
		24800			

		148800		16
		24800		

33400	)	396800	(	pens	11
		367400			

200	)	29400	
		147	
		167	

200	)	33400	
		167	

To change 761 guilders 9 stivers Bank, into Current Money,agio 4 $\frac{3}{8}$ per cent?

fls	Gulds stivers piers	Gulds stivers
As 100 :	104 7 8 ::	761 9
<u>20</u>	<u>20</u>	<u>20</u>
2000	2087	15229
	16	33400
	12530	6091600
	2087	45687
	<u>33400</u>	<u>45687</u>

2000) 508648600 = $\frac{3}{10}$

10) 254324 $\frac{20}{15895}$

16

Gulds 794 15 4 $\frac{3}{10}$ piers

94

80

143

128

152

144

84

80

4

VI Ireland.

A gentleman remits to Ireland £575 15s sterling, what will he receive there, the exchange being at 10 per cent?

As £	£	£
100 :	110 ::	575 15
<u>20</u>		<u>20</u>
2000		11515

110

115150

11515

2000) 1266650

633 650

Ans £ 5 8
633 6 6

2000) $\frac{20}{13000}$

6 1000

2000) $\frac{12}{12000}$

6

What must be paid in London for a remittance

of £633. 6. 6 d. Irish, exchange at 10 per cent?

Bo. £ £ £ 8.
 B. As 110 : 100 :: 633. 6. 6

20 20
 2200 12666

7.
 B. 12 12
 26400 151998

100
 26400) 151998.00 (575. 15 Ans.
 1320

1999
 1848
 1518

1320

198

20
 264) 3960 (15
 3960

Comparison of Heights & Measures.

If 95 Hs Flemish make 100 Hs English how many
 Hs English are equal to 275 Hs Flemish?

Hs Hs Hs
 As 95 : 100 :: 275

100
 95) 2750.0 (289 45
 190

850

760

900

855

45

95

200)

Vulgar Fractions.

A vulgar fraction is always expressed by two numbers, placed one above the other, with a line between them. The upper number is called the Numerator, the lower the Denominator. The denominator shows how many parts the whole number is divided into; the numerator shows the number of parts taken: thus in $\frac{1}{2}$ the lower figure, the denominator, shows that the penny is to be divided into 2 parts, and the upper figure shows that 1 of the two parts is to be taken. $\frac{9}{12}$ means that the thing is divided into 12 parts and 9 parts are to be taken. If therefore, the thing divided be a shilling, $\frac{9}{12}$ will be equal to 9 pence, because the $\frac{1}{12}$ part of a shilling is one penny.

Vulgar fractions are of four sorts.

A simple fraction has one numerator and one denominator.

A compound fraction consists of two or more simple fractions ^{with} the word of between each as $\frac{1}{2}$ of $\frac{4}{5}$ of 6.

A proper fraction has the numerator less than the denominator.

An improper fraction has the numerator equal to or greater than the denominator; as $\frac{5}{3}$ $\frac{8}{5}$.

A whole number and a fraction together are called a mixed number as $2\frac{3}{8}$.

Reduction.

Case 1 - To find a number which will divide both the numerator and denominator without a remainder, so as to reduce the fraction to its lowest terms.

Rule - Divide the lower term by the upper and that divisor by the remainder, continuing the operation till nothing remains; the last divisor is the number sought.

Reduce $\frac{40}{115}$ to its lowest terms Reduce $\frac{825}{1920}$ to its lowest terms

$$40 \div 115 \mid 2$$

$$\underline{92}$$

$$23 \div 40 \mid 2$$

$$\underline{40}$$

$$23 \div 40 \mid 2$$

$$\underline{115} \quad \underline{5}$$

$$825 \div 1920 \mid 2$$

$$\underline{1650}$$

$$270 \div 825 \mid 3$$

$$\underline{810}$$

$$15 \div \frac{825}{55} = \frac{55}{128}$$

Reduce $\frac{45}{10000}$ to its lowest terms.

$$45 \div 10000 \mid 222$$

$$\underline{90}$$

$$\underline{100}$$

$$\underline{90}$$

$$\underline{100}$$

$$\underline{90}$$

$$10 \div 45$$

$$45 \div 45 = 9$$

$$\underline{10000} = \underline{2000}$$

$$55 \div \frac{55}{9900} = \frac{1}{180}$$

$$\underline{9900} = \underline{180}$$

Case 2. To reduce a compound fraction to a simple one.

Rule. Multiply all the numerators together for a new numerator, and all the denominators together for a new denominator. Reduce it to its lowest terms, by Case 1.

Reduce $\frac{4}{5}$ of $\frac{7}{8}$ of $\frac{5}{19}$ to a simple fraction. Reduce $\frac{9}{19}$ of $\frac{3}{7}$ of $\frac{5}{11}$ to a simple fraction.

$$4 \times 7 \times 5 = 140$$

$$5 \times 8 \times 19 = 760$$

$$9 \times 3 \times 5 = 135$$

$$19 \times 7 \times 11 = 1483$$

Reduce $\frac{3}{5}$ of $\frac{12}{75}$ of $\frac{1}{2}$ of 10 to a simple fraction.

Reduce $\frac{1}{3}$ of $\frac{7}{12}$ of $\frac{5}{8}$ of 1 to a simple fraction.

$$3 \times 12 \times 1 \times 10 = 360$$

$$5 \times 75 \times 2 \times 1 = 750$$

$$1 \times 7 \times 5 \times 1 = 35$$

$$3 \times 12 \times 8 \times 1 = 288$$

Case 3. To reduce a fraction to a common denominator

Rule. Multiply each numerator into all the denominators except its own, for a new numerator; and all the denominators together for a new denominator.

Reduce $\frac{5}{5}$ $\frac{3}{10}$ and $\frac{1}{21}$ to a common denominator.

$$\begin{array}{r} 5 \times 10 \times 21 = 1050 \\ 3 \times 6 \times 21 = 378 \\ 9 \times 6 \times 10 = 540 \\ \hline 6 \times 10 \times 21 = 1260 \end{array}$$

Reduce $\frac{3}{7}$ $\frac{14}{15}$ $\frac{3}{7}$ and $\frac{4}{5}$ to a common denominator.

$$\begin{array}{r} 3 \times 15 \times 7 \times 5 = 1575 \\ 14 \times 7 \times 7 \times 5 = 3430 \\ 3 \times 7 \times 15 \times 5 = 1575 \\ 4 \times 7 \times 15 \times 7 = 2940 \\ \hline 7 \times 15 \times 7 \times 5 = 3675 \end{array}$$

Reduce $\frac{4}{11}$ $\frac{7}{6}$ $\frac{15}{10}$ and $\frac{1}{2}$ to a common denominator.

$$\begin{array}{r} 4 \times 6 \times 10 \times 2 = 480 \\ 7 \times 11 \times 10 \times 2 = 1540 \\ 15 \times 11 \times 6 \times 2 = 1980 \\ 1 \times 11 \times 6 \times 10 = 660 \\ \hline 10 \times 6 \times 11 \times 2 = 1320 \end{array}$$

Reduce $\frac{7}{11}$ $\frac{1}{9}$ $\frac{17}{18}$ and $\frac{13}{15}$ to a common denominator.

$$\begin{array}{r} 7 \times 9 \times 18 \times 15 = 17010 \\ 1 \times 11 \times 15 \times 15 = 2475 \\ 17 \times 11 \times 9 \times 15 = 25245 \\ 13 \times 11 \times 18 \times 9 = 23166 \\ \hline 9 \times 11 \times 18 \times 15 = 26730 \end{array}$$

Case 4. To reduce an improper fraction to an equivalent whole or mixed number.

Rule Divide the numerator by the denominator.

Find the value of $\frac{48}{3}$ in whole numbers. Find the value of $\frac{1203}{7}$ in whole numbers.

$$\begin{array}{r} 3 \div 48 \quad 16 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 7 \div 1203 \quad 180 \frac{3}{7} \\ \hline 7 \\ 50 \\ 50 \\ \hline 3 \\ 7 \end{array}$$

Find the value of $\frac{1960}{20}$ in whole numbers.

$$\begin{array}{r} 20 \div 1960 \quad 98 \\ \hline 180 \\ 180 \\ \hline \end{array}$$

Find the value of $\frac{8045}{77}$ in whole numbers.

$$\begin{array}{r} 77 \div 8045 \quad 104 \frac{31}{77} \\ \hline 77 \\ 345 \\ 301 \\ \hline 37 \\ 77 \end{array}$$

Case 5. To reduce a mixed number to an improper fraction.

Rule. Multiply the whole number by the denominator or the fraction, add to it the numerator and place the denominator below it.

Reduce $15\frac{4}{7}$ to an improper fraction.

$$15 \times 7 + 4 = \frac{109}{7}$$

Reduce $80\frac{4}{17}$ to an improper fraction.

$$\frac{80 \times 17 + 4}{17} = \frac{1364}{17}$$

Reduce $33\frac{2}{3}$ to an improper fraction.

$$33 \times 3 + 2 = \frac{104}{3}$$

Reduce $45\frac{7}{11}$ to an improper fraction.

$$\frac{45 \times 11 + 7}{11} = \frac{502}{11}$$

Case 6. To reduce fractions of one denomination to fractions of greater denomination, retaining the same value.

Rule. Multiply the denominator as in reduction of money.

Reduce $\frac{5}{8}$ of a shilling to the fraction of a pound sterling.

$$\frac{5}{8} \times 20 = \frac{5}{4}$$

Reduce $\frac{4}{5}$ of a yard to the fraction of a mile.

$$\frac{4}{5} \times 1760 = \frac{4}{5}$$

Reduce $\frac{9}{10}$ of 1 lb. to the fraction of a cwt.

$$\frac{9}{10} \times 112 = \frac{9}{10}$$

Reduce $\frac{7}{12}$ of an inch to the fraction of a mile.

$$\frac{7}{12} \times 63360 = \frac{7}{12}$$

Case 7. To reduce fractions of one denomination to a less denomination.

Rule. Multiply the numerator as in reduction of money.

Reduce $\frac{5}{11}$ of a pound sterling to the fraction of 1 d.

$$\frac{5}{11} \times 20 \times 12 = \frac{1200}{11}$$

Reduce $\frac{4}{7}$ of a guinea to the fraction of a shilling.

$$\frac{4}{7} \times 21 = \frac{84}{7}$$

Reduce $\frac{3}{10}$ of a cwt to the fraction of 1 lb.

$$\frac{3}{10} \times 112 = \frac{336}{10}$$

Reduce $\frac{3}{4}$ of a ton to the fraction of an ounce.

$$\frac{3}{4} \times 20 \times 4 \times 28 \times 16 = \frac{107520}{4}$$

Case 8 To reduce a complex fraction to an equivalent simple one.

Rule If the numerator or denominator or both contain a whole number reduce it to an improper fraction. then multiply the denominator of the lower fraction into the numerator of the upper for a new numerator; and multiply the denominator of the upper fraction into the numerator of the lower for a new denominator.

Reduce $5\frac{1}{4}$ to a simple fraction

$$5 = \frac{5}{1} = \frac{20}{4}$$

$$9\frac{1}{4} = \frac{37}{4}$$

Reduce $8\frac{3}{7}$ to a simple fraction

$$8 = \frac{8}{1} = \frac{56}{7}$$

$$19\frac{3}{7} = \frac{136}{7}$$

Reduce $4\frac{7}{8}$ to simple fraction

$$4\frac{7}{8} = \frac{39}{8}$$

$$11 = \frac{11}{1} = \frac{88}{8}$$

Reduce $5\frac{3}{10}$ to a simple fraction

$$5\frac{3}{10} = \frac{53}{10}$$

$$12 = \frac{12}{1} = \frac{120}{10}$$

Case 9 To find the value of a fraction.

Rule - Multiply the numerator by so many of the less as make one of the greater, as in reduction of money, and divide by the denominator.

What is the value of $\frac{3}{4}$ of a mile.

$$3 \times 5280 \div 4 = 3960$$

What is the value of $\frac{3}{5}$ of a guinea.

$$3 \times 21 \div 5 = 12.6$$

What is the value of $\frac{2}{9}$ of a cwt.

$$2 \times 4 \times 28 \div 9 = 24.88$$

What is the value of $\frac{4}{7}$ of an ounce.

$$4 \times 40 \times 4 \div 7 = 91.42$$

Case 10 To reduce a given quantity to its equivalent fractional part of any other denomination.

Rule - Reduce the given quantity to the lowest term mentioned for a numerator. then bring the denomination the fraction is to be of, to the same name for a denominator.

Reduce $5s 8d$ to the fraction of a pound.

$$\begin{array}{r} 5 \text{ s } 8 \text{ d} \\ 12 \\ \hline 88 \\ 4 \\ \hline 273 \\ \hline \text{Ans } 900 \end{array}$$

Reduce $17s 6d$ to the fraction of a farthing.

$$\begin{array}{r} 17 \text{ s } 6 \text{ d} \\ 12 \\ \hline 210 \\ 4 \\ \hline 840 \\ \hline \text{Ans } 840 \end{array}$$

Reduce $3s\ 11\frac{3}{4}d$ to the fraction of a penny.

$$\begin{array}{r} 3\ s\ 11\frac{3}{4}d \\ 12 \\ \hline 47 \\ 4 \\ \hline \end{array}$$

Ans $1\frac{9}{16}$

Reduce $3\ 14$ to the fraction of 1 cwt.

$$\begin{array}{r} 3\ 14 \\ 28 \\ \hline 98 \\ \hline \end{array}$$

As 112

Addition.

Rule: Reduce the fractions to a common denominator, add all the numerators together and place the common denominator under them.

3. Add together $\frac{2}{5}$, $\frac{7}{10}$ and $\frac{9}{10}$. Add together $\frac{5}{10}$, $\frac{3}{14}$, $\frac{7}{9}$ and $\frac{8}{9}$.

$$\begin{array}{r} 2 \times 8 \times 10 = 160 \\ 7 \times 5 \times 10 = 350 \\ 9 \times 5 \times 8 = 360 \\ \hline 870 = 270 \\ 5 \times 8 \times 10 = 400 = 400 \end{array}$$

$$\begin{array}{r} 5 \times 14 \times 9 \times 9 = 5670 \\ 3 \times 11 \times 9 \times 9 = 2673 \\ 7 \times 11 \times 14 \times 9 = 9702 \\ 8 \times 11 \times 14 \times 9 = 11088 \\ \hline 29133 \\ 11 \times 14 \times 9 \times 9 = 12474 \end{array}$$

4. When the fractions are of several denominations, reduce them to their simple values, and add them together.

add $\frac{3}{10}$ of a ton to $\frac{4}{9}$ of 1 cwt.

$$\begin{array}{r} 10 \text{ of a ton} = 60000 \\ 4 \text{ of 1 cwt} = 12127 \\ \hline \text{cwt } 612127 \end{array}$$

What is the amount of $\frac{1}{7}$ of a guinea, $\frac{1}{40}$ of a sovereign, and $\frac{1}{9}$ of a shilling.

$$\begin{array}{r} \frac{1}{7} \text{ of } 1 = 3\ 0 \\ \frac{1}{40} \text{ of } 1 = 3\ 6 \\ \frac{1}{9} \text{ of } 1 = 0\ 9\frac{1}{4} \\ \hline 1\ 7\ 3\frac{1}{4} \end{array}$$

Subtraction.

Rule: Reduce them to a common denominator, and subtract one from the other.

From $\frac{5}{11}$ take $\frac{14}{87}$.

$$\begin{array}{r} 5 \times 87 = 435 \\ 14 \times 11 = 154 \\ \hline 281 \\ 11 \times 87 = 957 \end{array}$$

From $\frac{60}{57}$ take $\frac{59}{80}$.

$$\begin{array}{r} 60 \times 60 = 3600 \\ 59 \times 59 = 3481 \\ \hline 119 \\ 57 \times 80 = 3540 \end{array}$$

If the fractions are of different denominations find their simple values, and subtract one from the other.

From $\frac{5}{9}$ of a pound sterling take $\frac{2}{7}$ of $\frac{3}{5}$ of a pound. From $\frac{5}{7}$ of a ton take $\frac{1}{2}$ of $\frac{3}{4}$ of a cwt.

$$\begin{array}{r} 2 \times 1 = 2 \\ 7 \times 5 = 35 \end{array} \quad \begin{array}{r} 5 \text{ of } £1 = 11 \cdot 1 \frac{1}{4} \\ \frac{2}{35} \text{ of } £1 = 1 \cdot 1 \frac{2}{35} \\ \hline 59 \cdot 11 \frac{3}{4} \end{array} \quad \begin{array}{r} 1 \times 3 = 3 \\ 2 \times 4 = 8 \end{array} \quad \begin{array}{r} 5 \text{ of a ton} = 14 \cdot 1 \frac{1}{4} \\ \frac{1}{8} \text{ of a cwt} = 1 \cdot 74 \\ \hline \text{cwt. } 13 \cdot 3 \cdot 18 \end{array}$$

From $\frac{3}{4}$ of a £ take $\frac{3}{4}$ of a shil ling. From $\frac{3}{4}$ of a lb take $\frac{1}{2}$ of an ounce. $\frac{3}{4}$ of a $\frac{1}{2}$ = 9.0.0
 $\frac{3}{4}$ of a $\frac{1}{2}$ = 3.8
 $\frac{3}{4}$ of $\frac{1}{2}$ = 8.10.10

Multiplication.

Rule - Reduce the mixed numbers to improper fractions, and compound fractions to simple ones, then multiply all the numerators together for a new numerator, and all the denominators together for a common denominator.

Multiply $\frac{5}{7}$ of $\frac{9}{11}$ by $8 \frac{4}{5}$. Multiply $42 \frac{3}{10}$ by $\frac{1}{2}$ of $\frac{5}{8}$ of 4.

$$\begin{array}{r} 5 \times 9 = 45 \\ 7 \times 11 = 77 \\ \hline 8 \frac{4}{5} = 44 \frac{4}{5} \\ 44 \times 45 = 1980 = 5 \cdot 55 \\ 5 \times 77 = 385 = 385 \end{array} \quad \begin{array}{r} 1 \times 5 \times 4 = 20 \\ 2 \times 5 \times 1 = 12 \\ \hline 42 \frac{3}{10} = 42 \frac{3}{10} \\ 433 \times 20 = 8460 = 70 \frac{1}{2} \\ 10 \times 12 = 120 = \frac{1}{2} \end{array}$$

Division.

Rule - Reduce the fractions as in Multiplication, invert the divisor, and proceed as in Multiplication.

Divide $8 \frac{3}{5}$ by $\frac{1}{2}$ of $\frac{4}{5}$ of 5

Divide $\frac{1}{7}$ of $\frac{2}{3}$ of 18 by $\frac{5}{8}$ of 10.

$$\begin{array}{r} 8 \frac{3}{5} = 43 \frac{3}{5} \\ 43 \times 10 = 430 = 4 \cdot 3 \\ 5 \times 20 = 100 = 10 \end{array} \quad \begin{array}{r} 1 \times 4 \times 5 = 20 \\ 2 \times 5 \times 1 = 10 \\ \hline 35 \times 60 = 2100 = 2 \cdot 090 \\ 21 \times 35 = 735 = 735 \end{array}$$

Rule of Three in Vulgar Fractions.

This Rule in principal does not vary from the rule of Simple Proportion. But as fractions sometimes occur in the prices of articles which cannot be rejected in proportional calculations, a few illustrative exercises are subjoined.

Rule - State the question as in simple Proportion. Reduce the mixed numbers to simple fractions, multiply the second and third terms together, and divide by the first.

If 1 anker of brandy cost $21\frac{5}{8}$ £, what will 1 hogshed cost?

$$21\frac{5}{8} = \frac{173}{8}$$

$$\text{As } \frac{1}{10} \quad \frac{173}{8} \quad \frac{0.5}{1}$$

$$\frac{1}{10} \times \frac{173}{8} \times \frac{0.5}{1} = \frac{10899}{80} \text{ Ans } £ 130.4.9$$

A grocer purchased $5\frac{3}{8}$ puncheons of peases for £ 5 14; what must be given for $25\frac{1}{4}$ at the same rate?

$$5\frac{3}{8} = \frac{43}{8}$$

$$25\frac{1}{4} = \frac{101}{4}$$

$$\text{As } \frac{8}{43} \quad \frac{514}{1} \quad \frac{101}{4}$$

$$\frac{8 \times 514 \times 101}{43 \times 1 \times 4} = \frac{415312}{172} \text{ Ans } £ 2414.12.1\frac{43}{172}$$

Division of Decimals

Decimal Fractions

Are so called because the fractions are always tenths, hundredths, thousandths &c. They differ from Vulgar Fractions in this that the denominator is not written; instead of writing $\frac{4}{10}$ or $\frac{15}{100}$ the fractions would be written decimally, 4 or 15. The point before it is used to distinguish it from whole numbers.

A decimal fraction is reduced to a vulgar fraction by placing a nought under each figure and prefixing the number 1. Thus .425 with 3 ciphers and 1 under it would be $\frac{425}{1000}$.

Each cipher placed before a decimal decreases its value ten fold thus 4 is $\frac{4}{10}$ but .04 is $\frac{4}{100}$, .004 is $\frac{4}{1000}$. Ciphers placed after it do not alter its value: 4 is equal to 40 or 400, because $\frac{4}{10}$ is equal to $\frac{40}{100}$ or $\frac{400}{1000}$.

Addition of Decimals.

Rule. Arrange the numbers to be added so that all the points are in a straight line. Add up as in simple numbers.

Add 3.15 2.081 4085. 23.1817 5.5.84521.
30.67 .0084 together .00010. 38.472. 3.816.

$$\begin{array}{r} 3.15 \\ 2.081 \\ 4085 \\ 30.67 \\ .0084 \\ \hline 36.3179 \end{array}$$

$$\begin{array}{r} 23. \\ 1817 \\ 5.5 \\ 84521. \\ .00010 \\ 38.472 \\ 3.816 \\ \hline 84891.96980 \end{array}$$

Rule of Three in Vulgar Fractions.

Subtraction of Decimals

Rule:—Arrange the numbers as in Addition, and subtract as in simple numbers, taking care to insert the point.

From 365 take 3.050.

$$365.000$$
$$\underline{3.050}$$
$$361.950$$

From 81.5 take 41.082.

$$81.500$$
$$\underline{41.082}$$
$$40.418$$

From 425 take 426.

$$425.000$$
$$\underline{.426}$$
$$424.574$$

From 7.008 take .0008.

$$7.0080$$
$$\underline{.0008}$$
$$7.0072$$

Multiplication of Decimals

Rule Arrange the numbers and proceed as in simple numbers. Count the number of decimals in both the multiplicand and multiplier, and point off so many figures at the right end the product, if there be not figures enough in the product place, cyphers to the left, and then prefix the point.

Multiply 3.081 by 4.12

$$3.081$$
$$\underline{4.12}$$
$$30972$$
$$12324$$
$$1209372$$

Multiply 27.004 by 36.02

$$27.004$$
$$\underline{36.02}$$
$$54008$$
$$162024$$
$$81012$$
$$972.08408$$

Multiply 14.02 by 90.09

$$14.02$$
$$\underline{90.09}$$
$$12618$$
$$12618$$
$$1203.0618$$

Multiply 1008 by 1008

$$1008$$
$$\underline{1008}$$
$$8064$$
$$1008$$
$$1016064$$

Division of Decimals

Rule. - Divide as in whole numbers. Mark off in the quotient as many decimal places as the dividend has more than the divisor. If the divisor has more decimal places than the dividend, add ciphers to the right hand of the dividend.

When the divisor and dividend have an equal number of decimals, the quotient is a whole number.

The quotient must always have as many decimal places as the dividend has more than the divisor.

The first figure in the quotient is always of the same relative value as that figure which stands over its unit's place in subtracting.

Divide 4.84 by 1.35

$$\begin{array}{r}
 1.35 \overline{) 4.84000} \quad (\underline{3.585} \\
 \underline{4.05} \\
 790 \\
 \underline{675} \\
 1150 \\
 \underline{1080} \\
 700 \\
 \underline{675} \\
 25
 \end{array}$$

Divide 5.42 by 1.25

$$\begin{array}{r}
 1.25 \overline{) 5.42000} \quad (\underline{4.375} \\
 \underline{5.00} \\
 420 \\
 \underline{375} \\
 450 \\
 \underline{375} \\
 750 \\
 \underline{750}
 \end{array}$$

Reduction of Decimals

Case 1 - To reduce a decimal to a vulgar fraction

Rule - Place a cipher under each decimal and prefix a unit; thus the vulgar fraction equal to the decimal .584 is $\frac{584}{1000}$.

What vulgar fractions are equal to the decimals

.5 .284 .001 .08437 .00009?

Ans $\frac{5}{10}$ $\frac{284}{1000}$ $\frac{1}{1000}$ $\frac{8437}{100000}$ $\frac{9}{100000}$ $\frac{1}{100}$ $\frac{1}{1000}$.

Case 2 - To reduce a vulgar fraction to a decimal.

Rule - Divide the numerator by the denominator add ciphers to any extent; the quotient is the decimal required.

Reduce $\frac{15}{16}$ to a decimal

Reduce $\frac{9}{12}$ to a decimal

$$12 \overline{) 900} (.75 \\ \underline{84} \\ 60 \\ \underline{60} \\ 0$$

$$16 \overline{) 150000} (.9375 \\ \underline{144} \\ 60 \\ \underline{48} \\ 120 \\ \underline{112} \\ 80 \\ \underline{80} \\ 0$$

Reduce $\frac{1}{425}$ to a decimal

$$425 \overline{) 100000000} (.0023529 \\ \underline{850} \\ 1500 \\ \underline{1275} \\ 2250 \\ \underline{2125} \\ 1250 \\ \underline{850} \\ 4000 \\ \underline{3825} \\ 175$$

Reduce $\frac{27}{400}$ to a decimal

$$400 \overline{) 270000} (.675 \\ \underline{2400} \\ 3000 \\ \underline{2800} \\ 2000 \\ \underline{2000} \\ 0$$

Case 3. To reduce money, weights or measures to equivalent decimals.

Rule. - Divide by as many of the lower denominations as make one of the higher annexing ciphers at will. If there be several denominations, proceed in the same manner with each, beginning with the lowest denomination.

Reduce 17s to a decimal.

$$\begin{array}{r} 20 \overline{) 1700} \quad (.85) \\ \underline{100} \\ 700 \\ \underline{700} \\ 000 \\ \underline{000} \\ 000 \end{array}$$

Reduce 5 cwt 2 qrs 10 lbs to the decimal of a ton.

$$\begin{array}{r} 28 \overline{) 10000} \\ \underline{4) 2357} \\ 20 \overline{) 5589} \\ \underline{2794} \end{array}$$

Reduce 4s 10d to a decimal.

$$\begin{array}{r} 4 \overline{) 20} \\ 12 \overline{) 105000} \\ 20 \overline{) 118750} \\ \underline{59375} \end{array}$$

Reduce 3 lbs 5 ozs to the decimal of a cwt.

$$\begin{array}{r} 16 \overline{) 500000} \\ 28 \overline{) 331250} \\ 4 \overline{) 11830} \\ \underline{2957} \end{array}$$

Case 4. To find the value of a decimal.

Rule. - Multiply the decimal by the number of the next lower denomination which is equal to one of its present denomination. Cut off as many places for decimals as the multiplicand has.

What is the value of .785 of a mile? What is the value of .375 of a ton?

$$\begin{array}{r} .785 \\ \times 8 \\ \hline 6.2920 \\ \times 40 \\ \hline 11.0800 \\ \times 5\frac{1}{2} \\ \hline 3.4000 \\ \times 3400 \\ \hline 7400 \\ \times 3 \\ \hline 2.2200 \\ \times 12 \\ \hline 2.6400 \\ \times 3 \\ \hline 1.9200 \end{array}$$

$$\begin{array}{r} .375 \\ \times 20 \\ \hline 7.500 \\ \times 4 \\ \hline 2.000 \end{array}$$

What is value of .9 of a shilling?

$$\begin{array}{r} .9 \\ \times 12 \\ \hline 10.8 \\ \times 4 \\ \hline 4.2 \end{array}$$

Rule of Three in Decimals.

This rule is useful when the price of articles which stand in relative proportion have their fractional parts expressed decimally.

Rule - State the question as in simple Proportion.

Reduce the first and Second terms to decimals of the same name. Multiply the second and Third terms together, and divide by the first term.

How many pounds of tea can I buy for £ 30 when 2 lbs cost 11.125?

$$\text{As } 11.125 : 2 :: 30$$

$$\begin{array}{r} 20 \\ \hline 600 \\ \hline 2 \\ \hline 11.125 \overline{) 1200.000000} \left(\begin{array}{l} 107.805 \\ \hline \hline \end{array} \right. \\ \underline{111.25} \\ .87500 \\ \underline{77875} \\ .95250 \\ \underline{89000} \\ .62500 \\ \underline{55000} \\ .75000 \\ \underline{55025} \\ .1875 \end{array}$$

If 2.825 qrs of coffee cost 9.875 £ what is the value of 1 cwt?

$$\text{As } 2.825 : 9.875 :: 1$$

$$\begin{array}{r} 4 \\ \hline 2.825 \overline{) 39.500000} \left(\begin{array}{l} 13.98 \\ \hline \hline \end{array} \right. \\ \underline{2825} \\ .11250 \\ \underline{8475} \\ .27750 \\ \underline{25425} \\ .23250 \\ \underline{22500} \\ .750 \\ \hline \hline \end{array}$$

If 6.5 ounces of fine silver be sold for 1.95 £
what must be given for 3.75 lbs at the same
rate?

$$\begin{array}{rcl} \text{ounces} & \text{£} & \text{lbs} \\ \text{As } 6.5 : 1.95 & :: & 3.75 \end{array}$$

$$\begin{array}{r} 4500 \\ 195 \\ \hline 22500 \\ 40500 \\ 4500 \\ \hline 877500 \end{array} \quad \begin{array}{l} \text{£} \\ 13.5 \end{array}$$

$$\begin{array}{r} 227 \\ 195 \\ \hline 325 \\ 325 \\ \hline 00 \end{array}$$

Mensuration

This rule teaches how to find the number of feet
in any thing, either solid or superficial and
to charge for it accordingly.

To find the superficial contents multiply the
length by the breadth, for a solid cube or a
parallelopipedon multiply the length by the
breadth, and that product by the depth.

The area of a figure is the space within the
bounds of the surface. Thus the area of a circle
is the space contained within the circum-
ference.

Glazing and Masons' Flat Work.

This is measured and charged by the square foot.

What is the worth of 10 squares of glass work,
each measuring 4 ft 10 in long, and 2 ft 11 in
broad at 1s 5d per foot?

ft in
4. 10

2. 11

9. 8

4. 5. 2

14. 1. 2

$4 \times 4 = 16$

50. 4. 8

4

225. 0. 8

s d
1. 0

18

12

1800

18

225

4050

5

12

9

0 $\frac{3}{4}$

0 $\frac{1}{4}$

12 $\div 4050$

20 $\div 33.8 \cdot 4$

£ 10. 18. 4

What will a piece of Glass that is 7 ft 4 in long 5 ft 6 in broad come to at 6s per foot?

ft in
7. 4

5. 6

35. 8

3. 8. 0

40. 4. 0

4

3

5

240

2

20 $\div 242$

£ 12. 2

By Solid Measure

What is the value of a block of marble 12 feet long 10 feet broad and 7 feet thick at 14s per foot?

III Italy.

They keep their accounts at Genoa and Leghorn, in livres and deniers, reckoning by the piece of eight or dollars = 4 s 6 d at par.

12 deniers make 1 sol.

20 sols 1 livre

5 livres 1 piece of eight at Genoa

6 livres 1 piece of eight at Leghorn

A. B. The exchange at Florence is by ducatoons, the exchange at Venice by ducats.

6 solide make 1 gross

24 gross 1 ducat.

Rule: - The same as before

A factor has sold goods at Florence for 250 ducatoons, at 54 s each, what is the value in pounds sterling?

ducats s ducats
As 1 : 54 :: 250

54

1000
1250

12) 13500
20) 11250

£ 56.5.0

A gentleman traveling would exchange £ 60. 14. 7, sterling, for Venice ducats at 4 s 5 d each, how many must he receive?

s d ducats £ s d
As 4.5 : 1 :: 60. 14. 7

12
53) 14575 (ducats
1061

397
3171

285
205

=

IV Portugal.

They keep their accounts at Oporto and Lisbon
in reas and exchange on the milrea = 6s 8½d
at par.

1000 reas make 1 milrea.

Rule: The same as with France.

A gentleman being desirous to remit to his correspon-
dent in London 2750 milreas, and ~~the~~ exchange
at 6s 5d per milrea, how much sterling will he
be the creditor for in London?

milrea	s	d	milreas
As 1	:	6. 5	:: 2750
		12	77
		<u>77</u>	19250
			19250
		12)	211750
		20)	17645.10
			<u>£ 882.5.10</u>

A merchant at Oporto remits to London 4366 mil-
reas and 183 reas, at 6s 5d 5/8 exchange per milrea,
how much sterling must be paid in London for
this remittance?

s	d	5/8	milrea.	reas.
5	5	5/8	4366	183
		12		1000
		<u>65</u>		<u>4366183</u>
		8		
		<u>525</u>		
		8		

As $\frac{1000}{1} : \frac{525}{8} :: \frac{4366183}{1}$

As $\frac{1}{1000} \times \frac{525}{8} \times \frac{4366183}{1} = \frac{2292246275}{8000}$

Ans $\frac{£}{1193} \cdot \frac{s}{17} \cdot \frac{d}{6} \cdot \frac{3}{4} \cdot \frac{075}{1000}$

Examples

$$\begin{array}{r} 2) 83697584 \\ \underline{41848792} \end{array}$$

$$\begin{array}{r} 3) 287084287 \\ \underline{95694762\frac{1}{3}} \end{array}$$

$$\begin{array}{r} 4) 845786295 \\ \underline{214446573\frac{3}{4}} \end{array}$$

$$\begin{array}{r} 5) 728438475 \\ \underline{145687695} \end{array}$$

$$\begin{array}{r} 6) 480007024 \\ \underline{80001170\frac{4}{6}} \end{array}$$

$$\begin{array}{r} 7) 324032764 \\ \underline{46290394\frac{6}{7}} \end{array}$$

$$\begin{array}{r} 8) 732000745 \\ \underline{91506093\frac{1}{8}} \end{array}$$

$$\begin{array}{r} 9) 37620695 \\ \underline{4180077\frac{2}{9}} \end{array}$$

$$\begin{array}{r} 10) 623400035 \\ \underline{62340003\frac{5}{10}} \end{array}$$

$$\begin{array}{r} 12) 584279384 \\ \underline{48689948\frac{8}{12}} \end{array}$$

$$\begin{array}{r} 14) 400050009 \\ \underline{36369091\frac{8}{11}} \end{array}$$

$$\begin{array}{r} 12) 457296843 \\ \underline{38108070\frac{3}{12}} \end{array}$$

$$\begin{array}{r} 5) 3504195402 \\ \underline{700839080\frac{2}{5}} \end{array}$$

$$\begin{array}{r} 7) 1700765299 \\ \underline{242966557} \end{array}$$

$$\begin{array}{r} 6) 31406489 \\ \underline{52344154\frac{5}{6}} \end{array}$$

$$\begin{array}{r} 8) 50493695 \\ \underline{6311711\frac{1}{8}} \end{array}$$

$$\begin{array}{r} 4) 10056489 \\ \underline{25141122\frac{1}{4}} \end{array}$$

$$\begin{array}{r} 9) 3768206957 \\ \underline{418689669} \end{array}$$

Long Division

$$\begin{array}{r}
 24 \overline{) 2873896} \\
 \underline{24 } \\
 47 \\
 \underline{24} \\
 233 \\
 \underline{216} \\
 178 \\
 \underline{168} \\
 109 \\
 \underline{96} \\
 136 \\
 \underline{120} \\
 16
 \end{array}$$

$$\begin{array}{r}
 119745 \\
 \underline{24} \\
 478996 \\
 \underline{239490} \\
 2873896. \text{ Proof}
 \end{array}$$

$$\begin{array}{r}
 24 \overline{) 10007141} \\
 \underline{06 } \\
 40 \\
 \underline{24} \\
 167 \\
 \underline{144} \\
 231 \\
 \underline{216} \\
 154 \\
 \underline{144} \\
 101 \\
 \underline{96} \\
 5
 \end{array}$$

$$\begin{array}{r}
 416964 \\
 \underline{24} \\
 1667861 \\
 \underline{833928} \\
 10007141. \text{ Proof}
 \end{array}$$

$$\begin{array}{r}
 25 \overline{) 4873865} \\
 \underline{25 \dots\dots\dots} \\
 237 \\
 \underline{225} \\
 \cdot 123 \\
 \underline{100}
 \end{array}$$

$$\begin{array}{r}
 \cdot 238 \\
 \underline{225}
 \end{array}$$

$$\begin{array}{r}
 \cdot 136 \\
 \underline{125} \\
 \cdot 115 \\
 \underline{100} \\
 \cdot 15
 \end{array}$$

$$\begin{array}{r}
 (194954 \\
 \underline{25} \\
 974785 \\
 \underline{389908} \\
 \underline{4873865} \text{ Proof.}
 \end{array}$$

$$\begin{array}{r}
 45 \overline{) 13876584} \\
 \underline{135 \dots\dots\dots} \\
 \cdot \cdot 376 \\
 \underline{360} \\
 \cdot 165 \\
 \underline{135} \\
 \cdot 308 \\
 \underline{270} \\
 \cdot 387 \\
 \underline{360} \\
 \cdot 27
 \end{array}$$

$$\begin{array}{r}
 (308368 \\
 \underline{45} \\
 1544867 \\
 \underline{1233472} \\
 \underline{13876587} \text{ Proof.}
 \end{array}$$

$$\begin{array}{r} 168 \overline{) 39687185 \dots} \quad (236233 \\ 336 \dots \quad 168 \end{array}$$

$$\begin{array}{r} .608 \quad 1889865 \end{array}$$

$$\begin{array}{r} 504 \quad 1417402 \end{array}$$

$$\begin{array}{r} 1047 \quad 236233 \end{array}$$

$$\begin{array}{r} 1008 \quad 39687185 \text{ Proof} \end{array}$$

$$\begin{array}{r} \dots 391 \end{array}$$

$$\begin{array}{r} 336 \end{array}$$

$$\begin{array}{r} .558 \end{array}$$

$$\begin{array}{r} 504 \end{array}$$

$$\begin{array}{r} .545 \end{array}$$

$$\begin{array}{r} 504 \end{array}$$

$$\begin{array}{r} .41 \end{array}$$

$$\begin{array}{r} 253 \overline{) 18173895 \dots} \quad (41833 \\ 1771 \dots \quad 253 \end{array}$$

$$\begin{array}{r} \dots 463 \quad 215505 \end{array}$$

$$\begin{array}{r} 253 \quad 359169 \end{array}$$

$$\begin{array}{r} 2108 \quad 143667 \end{array}$$

$$\begin{array}{r} 2024 \quad 18173895 \text{ Proof} \end{array}$$

$$\begin{array}{r} \dots 849 \end{array}$$

$$\begin{array}{r} 759 \end{array}$$

$$\begin{array}{r} .905 \end{array}$$

$$\begin{array}{r} 759 \end{array}$$

$$\begin{array}{r} 146 \end{array}$$

$$\begin{array}{r} 785 \overline{) 10008352 \dots} \quad (12749 \\ 785 \dots \quad 785 \end{array}$$

$$\begin{array}{r} 2158 \quad 63752 \end{array}$$

$$\begin{array}{r} 1540 \quad 102000 \end{array}$$

$$\begin{array}{r} .5883 \quad 89246 \end{array}$$

$$\begin{array}{r} 5495 \quad 10008352 \text{ Proof} \end{array}$$

$$\begin{array}{r} .3885 \end{array}$$

$$\begin{array}{r} 3140 \end{array}$$

$$\begin{array}{r} .7452 \end{array}$$

$$\begin{array}{r} 7065 \end{array}$$

$$\begin{array}{r} .387 \end{array}$$

1560) 1496371836... (959212

14040... 1560

9237 57552720

7800 4796060

14371 9592121

14040 1496370720

3318 1116

3120 1496371836 Proof

1983

1560

4236

3120

1116

3
3 1
3

2988) 2000781934... (669605

17928... 2988

20798 5356840

17928 5356840

28701 6026445

26892 13392104

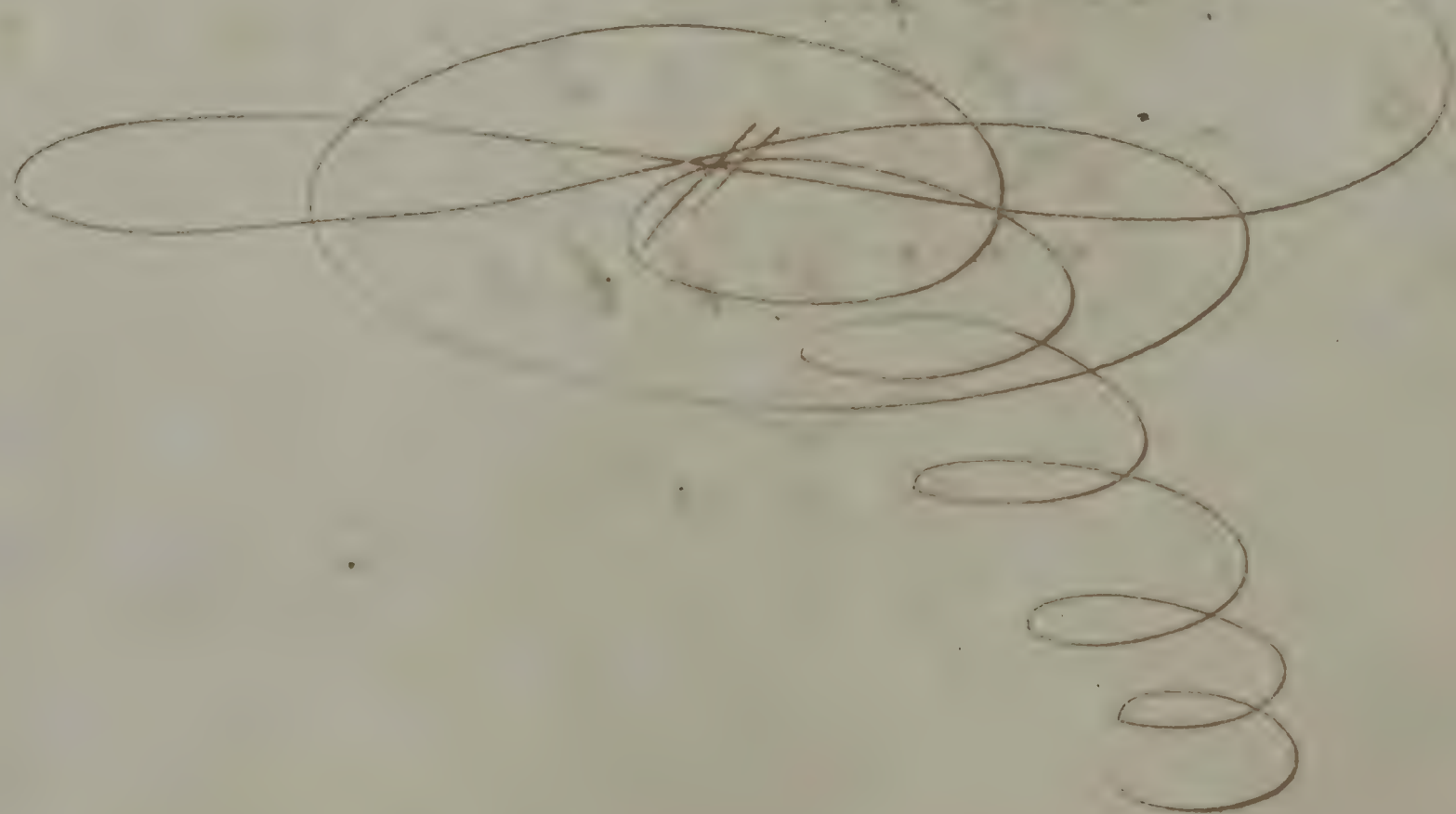
18099 2000779740

17928 2194

17134 2000781934 Proof

14940

2194



4799

9000718300

1875540

4799

42017

38392

36251

33593

26588

23995

25933

22995

19385

19196

1890

Proof

17896

1385904682

77609

125083

135974

125083

108916

107214

170282

160821

9461

Proof

33444

181937526

5440

167220

147175

133776

133992

133776

2166

Proof

Questions for Exercise

A Ship sailed 842 miles in a week what is that per day?

$$\begin{array}{r} 842 \ 2 \\ 7 \overline{) 1207} \end{array}$$

If a man have to wal^k 12 miles in 3 hours how many miles is that per hour?

$$\begin{array}{r} 12 \\ 3 \overline{) 4} \end{array}$$

The Inhabitants of London are Carried by the daily Revolution of the Earth 15120 miles an hour what is that per minute.

$$\begin{array}{r} 60 \overline{) 15120} \\ 252 \end{array}$$

The wheel of a coach turned round in 7 hours 53130 times in an hour, how many times was that per hour how many times in a quarter of an hour, and how many times in a minute?

Answers. 4590. 1894-2
126-7

If a vessel contains 120 gallons of water how long would it take to empty it by a pipe which discharges 8 gallons an hour?

$$\begin{array}{r} 120 \\ 8 \overline{) 15} \end{array}$$

What number is that which multiplied by 217 will make the product 4528543?

$$\begin{array}{r} 217 \overline{) 4528543} \quad (20864 \\ 434 \dots \\ \hline 1885 \\ 1736 \\ \hline 1494 \\ 1302 \\ \hline 1953 \\ 1519 \\ \hline 434 \end{array}$$

Addition of Money Rights and Measures.

Rule. Add the first row or denomination together, as is integers, then divide the sum by as many of the same denomination as makes one of the next greater, setting down the remainder under the row added, and carry the quotient to the next superior denomination, continuing the same to the last, which add as in simple Addition.

Money				Money			
£	s	d		£	s	d	
48	5	16	10 $\frac{1}{2}$	45	3	2	19 $\frac{3}{4}$
46	"	14	5 $\frac{1}{4}$	84	6	"	18 $\frac{1}{2}$
32	"	10	9 $\frac{1}{4}$	54	3	4	16 $\frac{1}{4}$
84	"	19	11 $\frac{1}{2}$	1	0	"	2 $\frac{1}{2}$
67	2	"	14 $\frac{1}{2}$	2	6	"	11 $\frac{1}{4}$
53	2	"	10 $\frac{1}{4}$	48	"	15	0 $\frac{1}{2}$
73	4	"	18 $\frac{1}{2}$	35	6	"	18 $\frac{1}{2}$
76	5	"	17 $\frac{1}{4}$	86	4	7	11 $\frac{1}{4}$
37	"	14	0 $\frac{1}{2}$	89	0	"	18 $\frac{1}{2}$
48	"	18	"	54	6	"	13 $\frac{1}{4}$
344	2	"	17 $\frac{1}{4}$	211	38	"	19 $\frac{1}{4}$
295	7	"	0 $\frac{1}{4}$	166	05	"	19 $\frac{2}{4}$
344	2	"	17 $\frac{1}{4}$	211	38	"	19 $\frac{1}{4}$

lbs.	oz.	dwt.	grs.	lbs.	3.	3.	9
456	10	18	21	473	2	10	6 $\frac{1}{2}$
732	"	11	4 $\frac{1}{2}$	863	"	9	" $\frac{1}{4}$
9	10	14	18	56	"	11	" $\frac{1}{2}$
86	"	0	3 $\frac{1}{2}$	23	"	9	" $\frac{1}{4}$
394	"	10	5 $\frac{1}{4}$	465	"	8	" $\frac{1}{2}$
126	"	8	17 $\frac{1}{2}$	973	1	11	" $\frac{1}{4}$
899	"	9	14 $\frac{1}{2}$	498	"	0	" $\frac{1}{4}$
654	"	10	" $\frac{1}{4}$	14	"	3	" $\frac{1}{2}$
42	"	3	16 $\frac{1}{4}$	1638	7	"	4 $\frac{1}{4}$
3404	"	3	6 $\frac{1}{2}$	11654	"	8	" $\frac{1}{2}$
2947	"	4	7 $\frac{1}{2}$	16387	"	4	" $\frac{1}{4}$
3404	"	3	6 $\frac{1}{2}$				

Alligation Alternate

Is the method of finding what quantity of any number of simples, whose rates are given, will compose a mixture of a given rate, so that it is the reverse of Alligation Medial, and may be proved by it.

Rule - 1 Write the rates of the simples in a column under each other.

2 Connect or link with a continued line, the rates of each simples which is less than that of the compound, with one or any number of the less.

3 Write the difference between the mixture rate and that of each of the simples, opposite the rates with which they are linked.

4 Then if only one difference stand against any rate, it will be the quantity belonging to that rate, but if there be several, their sum will be the quantity.

A grocer would mix sugar at 4d. 5d. and 10d. per lb, so as to sell the compound for 8d. per lb, What quantity of each must he take?

d		lb	d
8	4	2	at 4 = 8
	5	2	at 5 = 10
	10	5	at 10 = 50
		10	
			10) 80
			8 d

I desire to know how much tea at 10s. 14s. 9s. and 8s per lb, will compose a mixture worth 10s per lb?

s		lb	s
10	10	1	at 10 = 10
	14	2	at 14 = 28
	9	5	at 9 = 45
	8	4	at 8 = 32
		13	
			13) 130
			10 s

Alternation Partial

When the prices of all the samples, the quantity of but one of them and the mean rate are given to find the several quantities of the rest in proportion to that given.

Rule - Take the difference between each price, and the mean rate as before. Then, As the difference of that sample whose quantity is given is to the rest of the differences severally so is the quantity given to the several quantities required.

Alternation Total

Is when the price of each sample, the quantities to be compounded, and the mean rate are as follows. How much of each sort will make that quantity.

Rule. Take the difference between each price, and the mean rate as before. Then, As the sum of the difference: is to each particular difference:: so is the quantity ^{given} to the quantity required.

A vintner had 4 sorts of wine, white wine at 4s per gallon, Flemish at 5s per gallon, Malaga at 6s per gallon and Canary at 10s per gallon, would make a mixture of 50 gallons, to be worth 5s per gal. What quantity of each must he take?

$$\begin{array}{l} 5 \left\{ \begin{array}{l} 4 \\ 5 \\ 6 \\ 10 \end{array} \right. \end{array} \quad \begin{array}{l} 5+3+1=9 \\ 1 \\ 1 \\ 1 \\ 1 \\ \hline 12 \end{array}$$

$$\begin{array}{r} \text{As } 12 \text{ --- } 9 \text{ --- gal} \\ \text{--- } 50 \\ \hline 100 \\ 12 \overline{) 540} \text{ (45} \\ \underline{48} \\ 60 \\ \underline{60} \\ 0 \end{array}$$

$$\begin{array}{r} \text{As } 12 \text{ --- } 1 \text{ --- gal} \\ \text{--- } 50 \\ \hline 50 \\ 12 \overline{) 60} \\ \underline{60} \\ 0 \end{array}$$

$$\begin{array}{r} \text{As } 12 \text{ --- } 1 \text{ --- gal} \\ \text{--- } 50 \\ \hline 50 \\ 12 \overline{) 60} \\ \underline{60} \\ 0 \end{array}$$

$$\begin{array}{r} \text{As } 12 \text{ --- } 1 \text{ --- gal} \\ \text{--- } 50 \\ \hline 50 \\ 12 \overline{) 60} \\ \underline{60} \\ 0 \end{array}$$

A Silversmith hath 4 sorts of gold, viz. of 24 Carats fine of 22, 20, and 15 Carats fine, would mix as much of each sort so as to have 42 ozs of 17 Carats fine. How much must he take?

Carats	Carats
24	2
22	2
20	2
15	7 + 5 + 3 = 15

As 21 — 2 — 42

$$\begin{array}{r} 21 \overline{) 84} (4 \\ \underline{84} \end{array}$$

As 21 — 2 — 42

$$\begin{array}{r} 21 \overline{) 84} (4 \\ \underline{84} \end{array}$$

As 21 — 2 — 42

$$\begin{array}{r} 21 \overline{) 84} (4 \\ \underline{84} \end{array}$$

As 21 — 15 — 42

$$\begin{array}{r} 21 \overline{) 630} (30 \\ \underline{63} \\ 0 \end{array}$$

Position or The Rule of False
 Is a rule that by false or supposed numbers,
 taken at pleasure, discovers the true one
 required. It is divided into two parts Single
 and Double.

Single Position

Is by using one supposed number, and work-
 ing with it as the true one, you find the real
 number required by the following.

Rule: As the total of the errors: is to the
 true total: so is the supposed number: to the
 true one required.

Proof Add the several parts of the sum togeth-
 er, and if it agrees with the sum, it is right.

A person having about him a certain number
 of Portugal pieces about him, said if the third
 fourth and sixth of them were added together,
 they would make 54. I desire to know how
 many he had?

suppose he had 48

The third 16

fourth 12

sixth 8

36 : 54 :: 48

48

432

216

36) 2592 (72

252

72

72

72

18

15

12

9

54 Proof.

A gentleman bought a chaise, horse, and harness for £ 60 the horse came to twice the price of the harness, and the chaise to twice the price of the horse and harness, What did he give for each?

$$\begin{array}{r} £ \\ 14 \\ 28 \\ \hline 84 \end{array} \quad \begin{array}{r} £ \\ 14 \\ 28 \\ \hline 84 \end{array} \quad \begin{array}{r} £ \\ 14 \\ 28 \\ \hline 84 \end{array}$$

$$\begin{array}{r} 120 \\ 120 \\ \hline 240 \\ 80 \\ \hline 320 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 120 \\ 120 \\ \hline 240 \\ 80 \\ \hline 320 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 120 \\ 120 \\ \hline 240 \\ 80 \\ \hline 320 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array} \quad \begin{array}{r} 14 \\ 14 \\ \hline 28 \\ 84 \\ \hline 120 \end{array}$$

The Harness £ 6. 13. 4

" Horse 13. 0. 8
8. 13. 4
20. 0. 0

" Chaise £ 40. 0. 0

Double Position,

nd

By making use of two supposed numbers, and of both prove false (as it generally happens) they are with their errors, to be thus obtained.

Rule - 1 place each error against its respective position.

2 Multiply them cross ways.

3 If the errors are alike, that is both greater or both less, than the given number, take their difference for a divisor, and this difference for their product for a dividend, but if unlike, take their sum for a divisor, and the sum of their product for a dividend, the quotient will be the answer.

A gentleman bought a house with a garden, and a horse in the stable. for £500 now he paid 4 times the price of the horse for the garden and 5 times the price of the garden for the house. What was the value of the house, horse, and garden?

house 50
garden 200
house 1000

horse 30
garden 120
house 000

1250 too much by 750

750 too much by 250

50 X 750
30 X 250

750 22500 12500

250 12500

500) 10000 (£
1000 20
..... 4
0 80
5
400

£ house
20 horse
80 garden
400 house
£ 500 Proof

A gentleman going into a garden meets with some ladies, and says good morning to you 10 fair maids! Sir you are mistaken, answered one of them, we are not 10 but if we were twice as many more as we are we should be as many above 10 as we are now under. How many were they?

$$\begin{array}{r} 4 \\ 2 \\ \hline 8 \text{ too little by } 2 \end{array}$$

$$\begin{array}{r} 3 \\ 2 \\ \hline 6 \text{ too little by } 4 \end{array}$$

$$\begin{array}{r} 4 \\ 2 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \times 4 = 16 \\ 4 \times 3 = 12 \\ \hline 2 \overline{)10} \\ 5 \text{ Ans} \end{array}$$

Exchange.

Is receiving money in one country for the same value paid in another.

The par of Exchange is always fixed and certain, it being the intrinsic value of foreign money, compared with sterling; but the course of Exchange rises and falls upon various occasions.

I FRANCE.

They keep their accounts at Paris, Lyons, and Rouen, in livres sols and deniers, and exchange by the crown = 4 s 6 d at par.

12 deniers make 1 sol.

20 sols 1 livre.

3 livres 1 crown.

To change French into Sterling

Rule: As 1 crown : is to the given rate :: so is the French sum to the sterling required.

To change Sterling into French

If a bankrupt's estate pays 7s 9d. in the pound
what is paid upon a debt of £1250?

$$\begin{array}{r}
 \text{£} \quad \text{s} \quad \text{d} \quad \text{£} \\
 \text{If } 1 : 7 \cdot 9 :: 1250 \\
 \hline
 20 \quad 12 \\
 \hline
 20 \quad 93 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 20 \\
 25000 \\
 93 \\
 75000 \\
 225000 \\
 20 \overline{) 232500 \cdot 0} \\
 12 \overline{) 115250} \\
 20 \overline{) 9587 \cdot 0} \\
 \hline
 \text{£ } 484 \cdot 75 \cdot 0 \text{d.}
 \end{array}$$

If a gentleman spends 19s. 6d per day, and
lays by £150 at the years end, what is his
yearly income?

$$\begin{array}{r}
 \text{dys} \quad \text{s} \quad \text{d} \quad \text{day} \\
 \text{If } 1 \dots 19 \cdot 6 :: 365 \\
 \hline
 12 \\
 \hline
 234 \\
 \hline
 1460 \\
 1095 \\
 730 \\
 12 \overline{) 85410} \\
 20 \overline{) 7117 \cdot 0} \\
 355 \cdot 17 \cdot 0 \\
 150 \cdot 0 \cdot 0 \\
 \hline
 505 \cdot 17 \cdot 0 \text{d.}
 \end{array}$$

Tare and Tret

Tare is an allowance made by merchants to buyers for the weight of packages containing the goods sold.

Tret is an allowance of 4 lbs in 104 lbs. for waste, dust, &c.

Cloff is an allowance of 2 lbs. for every 3 cwt. for waste, dust &c to the retailer.

Gross Weight is the whole weight, including packages &c.

Nett Weight is when all allowances are deducted.

Tuttle is when part of the allowance is taken from the gross.

When the tare is so much on the whole weight, to find the nett weight.

Rule. - Subtract the tare from the gross weight and the remainder is the nett weight.

When the tare is so much per box, bag, &c

Rule. - Multiply the tare by the number of packages, and subtract the product from the gross weight, the remainder is the nett weight.

Gross weight of 10 boxes, 50 cwt 1 qrs tare per box 24 lbs?

cwt. qr. lbs
0 0 24

10

2 0 18

cwt. qr. lbs
50 1 0

10

50 2 2 0

2 0 18

50 0 1 12

Gross weight of 25 hhd's. 18 cwt. 3 qrs 7 lbs. each,
tare per hhd 1 cwt 7 1/2 lbs?

cwt	qr	lbs	oz		cwt	qr	lbs	
18	3	7	8	$\times 25$	18	3	7	$\times 25$
				5×5				5×5
<u>5</u>					<u>5</u>			
5	1	9	8		94	0	7	
<u>5</u>					<u>5</u>			
26	2	19	8		470	1	7	0
<u>26</u>					<u>26</u>			
					443	2	15	1/2

Gross weight of 19 bags, 12 cwt. 1 qr. 4 lbs. each tare
per bag 15 lbs, net allowed?

cwt	qr	lbs			cwt	qr	lbs	
0	0	15	$\times 19$		12	1	4	$\times 19$
			9×2					9×2
<u>1</u>					<u>110</u>			
			2					2
2	1	18			221	0	18	
<u>0</u>					<u>12</u>			
			15					4
<u>2</u>					<u>233</u>			
			5					20
<u>2</u>					<u>2</u>			
			2					5
			26		2	30	3	15
					<u>8</u>			
					<u>8</u>			
					<u>222</u>			
								0
								1

7 butts each 12 cwt, tare 2 qrs per butt net allowed?

cwt	qr	lbs			cwt	qr	lbs	
12	0	0			0	2	0	
			7					7
<u>84</u>					<u>3</u>			
			2					0
<u>80</u>					<u>3</u>			
			2					0
			26		80	2	0	
					<u>3</u>			
					<u>3</u>			
					<u>77</u>			
								1
								17
								$1/4$

Practice

As
we
to
and
were
be a
may
were

Is a contraction of the rule of three Direct, when the first term happens to be an unit, or one, and has its name from its frequent use in business.

Case 1

When the price is an aliquot, or even part of a shilling Rule. Divide the given number and the part, and the quotient is the answer in shillings; what remains is to be reduced as in Compound Division.

<p>1095 yards at 3 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d 3</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{4}$</td> <td style="padding: 5px;">yards 1095</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">20 27.3.9</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">£ 13.13.9</td> </tr> </table>	d 3	$\frac{1}{4}$	yards 1095			20 27.3.9			£ 13.13.9	<p>3740 yards at 4 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d 4</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{3}$</td> <td style="padding: 5px;">yards 3740</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">20 124.8.8</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">£ 52.8.8</td> </tr> </table>	d 4	$\frac{1}{3}$	yards 3740			20 124.8.8			£ 52.8.8
d 3	$\frac{1}{4}$	yards 1095																	
		20 27.3.9																	
		£ 13.13.9																	
d 4	$\frac{1}{3}$	yards 3740																	
		20 124.8.8																	
		£ 52.8.8																	

Se
can
cert
mor
of
case

<p>7590 yards at 2 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d 2</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{5}$</td> <td style="padding: 5px;">yards 7590</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">20 125.8.0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">£ 53.8.0</td> </tr> </table>	d 2	$\frac{1}{5}$	yards 7590			20 125.8.0			£ 53.8.0	<p>3203 yards at 12 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d $\frac{1}{12}$</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{8}$</td> <td style="padding: 5px;">yards 3203</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">20 40.0.4 $\frac{1}{2}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">20.0.4 $\frac{1}{2}$</td> </tr> </table>	d $\frac{1}{12}$	$\frac{1}{8}$	yards 3203			20 40.0.4 $\frac{1}{2}$			20.0.4 $\frac{1}{2}$
d 2	$\frac{1}{5}$	yards 7590																	
		20 125.8.0																	
		£ 53.8.0																	
d $\frac{1}{12}$	$\frac{1}{8}$	yards 3203																	
		20 40.0.4 $\frac{1}{2}$																	
		20.0.4 $\frac{1}{2}$																	

Case 2

When the price is pence, or pence and farthings and no even part of a shilling.

Rule. Find the even parts for the price, and proceed as in Case 1. and the sum of the quotients is the answer.

<p>2705 yards at 8 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d 8</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{2}$</td> <td style="padding: 5px;">yards 2705</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">1382.8</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">2</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{3}$</td> <td style="padding: 5px;">450.10</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">20 184.3.4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">£ 92.3.4</td> </tr> </table>	d 8	$\frac{1}{2}$	yards 2705			1382.8	2	$\frac{1}{3}$	450.10			20 184.3.4			£ 92.3.4	<p>3702 yards at 7 d per yd.</p> <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">d 7</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{2}$</td> <td style="padding: 5px;">yds 3702</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">1881</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">1</td> <td style="border-right: 1px solid black; padding: 5px;">$\frac{1}{5}$</td> <td style="padding: 5px;">313.8</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">20 219.4.6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px; border-top: 1px solid black;">£ 109.14.6</td> </tr> </table>	d 7	$\frac{1}{2}$	yds 3702			1881	1	$\frac{1}{5}$	313.8			20 219.4.6			£ 109.14.6
d 8	$\frac{1}{2}$	yards 2705																													
		1382.8																													
2	$\frac{1}{3}$	450.10																													
		20 184.3.4																													
		£ 92.3.4																													
d 7	$\frac{1}{2}$	yds 3702																													
		1881																													
1	$\frac{1}{5}$	313.8																													
		20 219.4.6																													
		£ 109.14.6																													

Si
the

Case 3

When the price is shillings or shillings and pence and an even part of a pound.

Rule. Divide the given quantity by the even part and the quotient is the answer in Pounds. If there be a remainder, reduce it as in Compound Division.

478 yards at 10 s per yard

397 yards at 3.4 d per yd.

$$\begin{array}{r|l} 5 & \frac{1}{4} \\ \hline 478 & \\ \hline \pounds & 119 \cdot 10 \cdot 0 \end{array}$$

$$\begin{array}{r|l} 34 & \frac{1}{5} \\ \hline 397 & \\ \hline \pounds & 66 \cdot 3 \cdot 4 \end{array}$$

797 $\frac{1}{2}$ yards at 2.6 d per yd.

159 $\frac{1}{4}$ yards at 1.8 d per yd.

$$\begin{array}{r|l} 2.6 & \frac{1}{2} \\ \hline 797 \frac{1}{2} & \\ \hline \pounds & 99 \cdot 13 \cdot 9 \end{array}$$

$$\begin{array}{r|l} 1.8 & \frac{1}{2} \\ \hline 159 \frac{1}{4} & \\ \hline & 13 \cdot 5 \cdot 5 \end{array}$$

Case 4

When the price is shillings or shillings & pence which makes no even part of a pound

Rule. Find the even parts for the price, & divide as in Case 3. or multiply the given quantity by the shillings, & take the even parts of shillings for the pence, as in Case 2.

8172 yards at 15 s per yd.

3691 yards at 19 s per yd.

$$\begin{array}{r} 8172 \\ \times 15 \\ \hline \end{array}$$

$$\begin{array}{r} 3691 \\ \times 19 \\ \hline \end{array}$$

$$40860$$

$$33219$$

$$8172$$

$$3691$$

$$\begin{array}{r} 20 \overline{) 122580} \\ \hline \pounds 6129 \cdot \end{array}$$

$$\begin{array}{r} 20 \overline{) 70129} \\ \hline \pounds 3506 \cdot 9 \end{array}$$

476.5 yards at 11.8 d.

3718 yards at 18.4 d.

$$\begin{array}{r|l} 6 & \frac{1}{2} \\ \hline 4765 & \\ \hline & 11 \\ \hline 2 & \frac{1}{3} \\ \hline 52415 & \\ 2382 \cdot 8 & \\ \hline 794 \cdot 2 & \end{array}$$

$$\begin{array}{r|l} 4 & \frac{1}{3} \\ \hline 3718 & \\ \hline & 18 \\ \hline 29744 & \\ 3718 & \\ \hline 1239 \cdot 4 & \end{array}$$

$$20 \overline{) 55591 \cdot 8}$$

$$20 \overline{) 68163 \cdot 4}$$

$$\pounds 2779 \cdot 11 \cdot 8$$

$$\pounds 3408 \cdot 3 \cdot 4$$

Case 5

49
 were
 to y
 arose
 were
 be as
 may
 were

When the price is an even number of shillings
 Rule. - Multiply the quantity by half the shillings,
 doubling the first (or right hand) figure of the product
 for shillings, the rest are pounds.

347 yards at 4 s

638 yards at 6 s

$$\begin{array}{r} 347 \\ \times 2 \text{ half shillings} \\ \hline \text{£ } 69.8 \end{array}$$

246 yards at 10 s

523 yards at 14 s

$$\begin{array}{r} 246 \\ \times 5 \\ \hline \text{£ } 123.0 \end{array}$$

$$\begin{array}{r} 638 \\ \times 3 \text{ half shillings} \\ \hline \text{£ } 191.8 \end{array}$$

589 $\frac{1}{4}$ yards at 8 s

324 $\frac{1}{4}$ yards at 12 s

$$\begin{array}{r} 589 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 324 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 235.12 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 194.14 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 235.14 \end{array}$$

$$\begin{array}{r} 194.17 \end{array}$$

Case 6

can
 certa
 mon
 of E
 case

When the price is any amount of shillings which is
 an aliquot part of a pound sterling.

Rule. - Divide by the aliquot part.

8376 yards at 3.4 d.

9942 yards at 6.8 d.

$$\begin{array}{r} 8376 \\ \div 3 \frac{1}{2} \\ \hline \text{£ } 1396.0 \end{array}$$

$$\begin{array}{r} 9942 \\ \div 6 \frac{1}{2} \\ \hline \text{£ } 3314.0 \end{array}$$

9541 yards at 1.4 d.

5425 yards at 2.6 d.

$$\begin{array}{r} 9541 \\ \div 1 \frac{1}{2} \\ \hline \text{£ } 836.14 \end{array}$$

$$\begin{array}{r} 5425 \\ \div 2 \frac{1}{2} \\ \hline \text{£ } 678.20 \end{array}$$

3344 yards at 1.3 d.

3876 yards at 8.8 d.

$$\begin{array}{r} 3344 \\ \div 1 \frac{1}{3} \\ \hline \text{£ } 209.0 \end{array}$$

$$\begin{array}{r} 3876 \\ \div 1 \frac{1}{2} \\ \hline \text{£ } 320.11.8 \end{array}$$

Case 7

When the price is shillings and pence which are not aliquot parts of a pound.

Rule. — Multiply by the shilling, take parts for the pence and farthings as in Case 2, add them together, and divide by 20.

3143 yards at 7½ d.

6	½	3143
12	¼	1571 0
		392 10 ½
20		5107 4 ½
		£255 7 4 ½

1505 yards at 9s 7½ d.

6	½	1505
		9
12	¼	1408 5
		782 0
		195 7 ½
20		1508 3 1 ½
		£753 3 1 ½

6885 yards at 10s 7½ d.

6	½	6885
		10
		688500
12	¼	3442 0
		880 7 ½

20 672802 1 ½

£33640 2 1 ½

9654 yards at 11s 4 d.

4	¾	9654
		11
		106194
		3218

20 109412

£5470 12

Case 8

When the price is pounds, shillings, pence and farthings

Rule. — Multiply by the pounds, and take aliquot parts for the rest; or multiply by the whole number of shillings contained in the pounds and shillings, and take parts for the pence.

9834 yards at £1 18s 9d.

8	½	9834	1 18
		38	20
		8872	38
		502	
3	½	4917	
		2458	0

20 38106 7 0

£19053 7 0

2437 yds at £1 3s 3¼ d.

3	¼	2437	1 3
		23	20
		7311	23
		4874	
¼	¼	6091	3
		152	4 ¾

20 56812 7 ¾

2840 12 7 ¾

Ag was to y ans were be a may were	4229 yds at £1.15.9 ³ / ₄ d			9876 yds at £1.3.4d		
	0	2	4229.1.15	4	3	9876.1.3
			35 20			23 20
			21145 35			29828 23
			12687			19752
	3	¹ / ₂	2114.8			3292
	³ / ₄	³ / ₄	1057.3	20		230440
			352.5			£11522.0
	20		15153.9.2			
			£7576.19.2			

Case 9

When the quantity and the price are both of several denominations.

Rule. - Multiply the price by the number in the quantity of the highest name, and take parts for the rest.

2 cwt 1 qr 3 lbs at £1.10s

0³/₄d per cwt.

1	¹ / ₄	£.10.6 ³ / ₄
		2
		3.1.0 ¹ / ₂
2	¹ / ₄	0.7.7 ¹ / ₂
1	¹ / ₂	0.0.8 ¹ / ₂
		0.0.3 ¹ / ₄
		£.3.9.5 ³ / ₄

4 cwt 3 qrs 15 lbs at £5.

2s 6d per cwt.

2	¹ / ₂	£.5.2.6
		4
		20.10.0
1	¹ / ₂	2.11.3
14	¹ / ₂	1.5.7 ¹ / ₂
1	¹ / ₄	0.12.9 ³ / ₄
		0.0.10 ³ / ₄

17 cwt 3 qrs 14 lbs at £3.17s

6d per cwt.

2	¹ / ₂	£.3.17.8 × 17
		8 × 2 + 1 =
		31.0.0
		2
		62.0.0
		3.17.8
		65.17.8
1	¹ / ₂	1.18.9
14	¹ / ₂	0.19.4 ¹ / ₂
		0.9.8 ¹ / ₄
		£.89.5.3 ³ / ₄

£25.0.7

1 cwt 2 qrs 7 lbs at £3.

1s 1¹/₂d per cwt.

2	¹ / ₂	£.3.1.1 ¹ / ₂
7	¹ / ₈	1.10.8 ³ / ₄
		0.3.9 ³ / ₄
		4.15.8

Simple Interest.

Interest is money paid for the use of money.

The principal is the money lent.

The rate per cent is the sum paid for the loan of £100

The amount is the principal and interest added together.

Case 1. To find the interest for years.

Rule—Multiply the principal by the rate per cent; divide the product by 100, the quotient is the interest for 1 year multiply by the given number of years.

What is the interest of £764 for 4 years at 5 per cent per annum?

$$\begin{array}{r} \text{£} \\ 764 \\ \times 5 \\ \hline 3820 \\ 100 \div 3820 \\ \hline 20 \\ 100 \div 400 \\ \hline 38 \cdot 4 \\ \hline 4 \end{array}$$

£152.10s

What is the interest of £276.10s for 3½ years at 4 per cent per annum?

$$\begin{array}{r} \text{£} \\ 276 \cdot 10 \\ \times 4 \\ \hline 1106 \cdot 0 \\ 100 \div 1106 \cdot 0 \\ \hline 20 \\ 100 \div 120 \\ \hline 1 \cdot 20 \\ 100 \div 12 \\ \hline 240 \\ 100 \div 240 \\ \hline 2 \cdot 40 \\ 100 \div 4 \\ \hline 160 \\ 100 \div 160 \\ \hline 1 \cdot 60 \end{array}$$

$$\begin{array}{r} \text{£ s d} \\ \frac{1}{2} \div 11 \cdot 1 \cdot 2 \frac{1}{4} \\ \hline 3 \frac{1}{2} \\ 33 \cdot 3 \cdot 6 \frac{1}{4} \\ 5 \cdot 10 \cdot 7 \\ \hline \text{£ } 38 \cdot 14 \cdot 1 \frac{3}{4} \end{array}$$

Q. What is the interest of £619. 17s 6d for $7\frac{1}{2}$ years at 4 per cent per annum?

to y.
ans.
were
be as
mag
were

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 619 \cdot 17 \cdot 6 \\ \hline 4 \end{array}$$

$$100 \div 2479 \cdot 10 \cdot 0$$

$$\begin{array}{r} 20 \\ 100 \div 1590 \\ \hline 15 = 90 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 100 \div 1080 \\ \hline 10 = 80 \end{array}$$

$$\begin{array}{r} 4 \\ 100 \div 320 \\ \hline 3 = \end{array}$$

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ \frac{1}{2} \div 24 \cdot 15 \cdot 10 \frac{3}{4} \end{array}$$

$$\begin{array}{r} 7 \\ \hline 173 \cdot 11 \cdot 3 \frac{1}{4} \end{array}$$

$$12 \cdot 7 \cdot 11 \frac{1}{4}$$

$$\text{£} 185 \cdot 19 \cdot 2 \frac{1}{2}$$

What is the amount of £2743. 19s 6d for $2\frac{1}{2}$ years at 6 per cent per annum?

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 2743 \cdot 19 \cdot 6 \\ \hline 6 \end{array}$$

$$100 \div 10403 \cdot 17 \cdot 0$$

$$\begin{array}{r} 20 \\ 100 \div 1277 \\ \hline 12 = 77 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 100 \div 924 \\ \hline 9 = 24 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 96 \end{array}$$

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ \frac{1}{2} \div 104 \cdot 12 \cdot 9 \frac{1}{4} \end{array}$$

$$\begin{array}{r} 2 \\ \hline 329 \cdot 5 \cdot 6 \frac{1}{2} \\ \hline 82 \cdot 6 \cdot 4 \end{array}$$

$$411 \cdot 11 \cdot 10 \frac{1}{2}$$

$$2743 \cdot 19 \cdot 6$$

$$\text{£} 3155 \cdot 11 \cdot 4 \frac{1}{2}$$

Pro
by

Case 2. - To find the interest for weeks and days.
 Rule. - If they form an aliquot part of a year, divide the interest of one year by that aliquot part. If they do not form an aliquot part, reduce the weeks and days to days, and say as 365 days are to the number of days, so is 1 years interest to the interest required.

What is the interest of £100 for 27 weeks 3 day at 5 per cent per annum?

£	weeks - day
100	27 · 3
5	<u>7</u>
As 365 :	500 :: <u>192</u>

$$365 \div 192 \overline{) 960} \left(\underline{\underline{£2 \cdot 12s \cdot 7d.}}$$

$$\begin{array}{r} 730 \\ 230 \end{array}$$

$$365 \div 20 \overline{) 4600} \left(\cdot 12 \right.$$

$$\begin{array}{r} 4380 \\ \cdot 220 \end{array}$$

$$365 \div 12 \overline{) 2640} \left(7 \right.$$

$$\begin{array}{r} 2555 \\ \cdot 85 \end{array}$$

Find the interest of £250 for 26 weeks 5 days at 4 per cent per annum?

£	weeks	dys
250	26	5
4	<u>7</u>	
As 365 :	10,00	:: 187

$$365 \div 187 \overline{) 1870} \left(\underline{\underline{£5 \cdot 2s \cdot 5\frac{1}{2}d.}}$$

$$\begin{array}{r} 1825 \\ 45 \end{array}$$

$$365 \div 20 \overline{) 900} \left(2s \right.$$

$$\begin{array}{r} 730 \\ 170 \end{array}$$

Ag
well
to y
and
were
be as
may
were

$$\begin{array}{r}
 170 \\
 12 \\
 \hline
 365 \div 2040 (5d. \\
 1825 \\
 \hline
 215 \\
 4 \\
 \hline
 365 \div 860 (\frac{1}{2} \\
 730 \\
 \hline
 130
 \end{array}$$

What is the interest of £1000 at $4\frac{1}{2}$ per cent per annum, for 7 years 21 weeks 3 days?

$$\begin{array}{r}
 £ \\
 \frac{1}{2} \times 1000 \\
 4\frac{1}{2} \\
 4000 \\
 500 \\
 \hline
 4500 \\
 7 \\
 \hline
 315 \\
 18
 \end{array}$$

$$\underline{\underline{£333.9s.10\frac{1}{4}d.}} \quad \begin{array}{l} \text{weeks} \\ 21 \end{array} \begin{array}{l} \text{days} \\ 3 \end{array}$$

$$\begin{array}{r}
 £ \\
 365 : 45 :: 150 \\
 150 \\
 \hline
 2250 \\
 45 \\
 \hline
 365 \div 8750 (18
 \end{array}$$

can
cert
me
of
cas

$$\begin{array}{r}
 6570 \\
 180 \\
 20 \\
 \hline
 365 \div 3600 (9 \\
 3285 \\
 \hline
 315
 \end{array}$$

Pro
by

$$\begin{array}{r}
 12 \\
 \hline
 365 \div 3780 (10 \\
 3650 \\
 \hline
 130
 \end{array}$$

$$\begin{array}{r}
 4 \\
 \hline
 365 \div 520 (\frac{1}{4} \\
 365 \\
 \hline
 155
 \end{array}$$

17

Commission.

Is an allowance to a factor, broker, or agent on account of goods bought or sold for his employer.

Rule:—Divide the sum bought or sold by 100, which gives 1 per cent, multiply or divide this sum according to the rate allowed, as in the rule of Practice.

What is the commission on £ 2814. 10s. at 10s per cent?

$$\begin{array}{r} \text{£} \quad \text{s} \\ 100 \div 2814 \cdot 10 \\ \hline 28-14 \cdot 10 \\ \hline 20 \end{array}$$

$$\begin{array}{r|l} 10 \frac{1}{2} & 28 \cdot 2 \cdot 10 \frac{1}{4} \\ \hline & \text{£ } 14 \cdot 1 \cdot 5 \frac{1}{2} \end{array}$$

$$\begin{array}{r} 100 \div 290 \\ \hline 2-90 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 100 \div 1080 \\ \hline 10-80 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 100 \div 320 \\ \hline 3- \\ \hline \end{array}$$

What do I pay to a broker at $\frac{3}{4}$ per cent, for £ 11,250?

$$\begin{array}{r} \text{£} \\ 100 \div 11250 \\ \hline 112-50 \\ \hline 20 \\ 100 \div 1000 \\ \hline 10- \end{array}$$

$$\begin{array}{r|l} 2 \frac{3}{4} & 112 \cdot 10 \cdot 0 \\ \hline 8 \frac{1}{2} & 28 \cdot 2 \cdot 0 \\ \hline 8 & 14 \cdot 1 \cdot 3 \\ \hline & \text{£ } 42 \cdot 3 \cdot 9 \end{array}$$

At £3.4s2d percent what is the commission for
 A g. £584 10s?

well
 to y
 anse
 were
 be as
 may
 were

$$\begin{array}{r}
 100 \div \frac{5}{584 \cdot 10} \\
 \hline
 584 \cdot 10 \\
 20 \\
 100 \div \frac{10}{1090} \\
 \hline
 1090 \\
 15 = 90 \\
 12 \\
 100 \div \frac{10}{1080} \\
 \hline
 1080 \\
 10 = 80 \\
 4 \\
 100 \div \frac{4}{320} \\
 \hline
 320 \\
 3 =
 \end{array}$$

		£ s d
4	$\frac{1}{5}$	5.15.10 $\frac{3}{4}$
		3
		17.10.8 $\frac{1}{4}$
2	$\frac{1}{24}$	1.3.4 $\frac{1}{4}$
		0.0.11 $\frac{3}{4}$
		<u>£18 15. 0 $\frac{1}{4}$</u>

At 5% commission what must I pay for £327
 15s4d?

$$\begin{array}{r}
 100 \div \frac{5}{327 \cdot 15 \cdot 4} \\
 \hline
 327 \cdot 15 \cdot 4 \\
 3 = 27 \cdot 15 \cdot 4 \\
 20 \\
 100 \div \frac{20}{555} \\
 \hline
 555 \\
 5 = 55 \\
 12 \\
 100 \div \frac{12}{664} \\
 \hline
 664 \\
 8 = 64 \\
 4 \\
 100 \div \frac{4}{258} \\
 \hline
 258 \\
 2
 \end{array}$$

		£ s d
2	$\frac{1}{5}$	3.5.5 $\frac{1}{2}$
		5
		15.7.8 $\frac{1}{2}$
		0.10.11
		<u>£16.18.7 $\frac{1}{2}$</u>

I
 add
 cert
 me
 of
 cas

Pro
 by

Insurance.

To find at a certain rate what sum must be paid for protection from loss by fire, or other accidents

Rule. - Calculate as in Commission if there be no time given, If time be given, calculate as in Interest.

What is the insurance at 7s 9d on £4182.10s?

$$\begin{array}{r} \text{£} \quad \text{s} \\ 100 \div \underline{4182.10} \\ 4182.10 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 100 \div \underline{1050} \\ 1050 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 100 \div \underline{000} \\ 000 \\ \hline 0 \end{array}$$

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 0 \frac{1}{2} \quad \underline{41.16.0} \\ 8 \times 2 \\ \hline 334.12.0 \\ 2 \\ \hline 669.4.0 \\ 41.10.0 \\ \hline 711.0.0 \\ 3 \frac{1}{2} \quad \underline{20.18.3} \\ 10.9.1 \frac{1}{2} \\ \hline 20 \quad \underline{742.7.10 \frac{1}{2}} \\ 37.2 \\ 20 \\ \hline 20 \div \underline{47} \\ 2.7 \\ 12 \\ \hline 20 \div \underline{94} \\ 14.14 \\ 4 \\ \hline 20 \div \underline{58} \\ \frac{1}{2} \end{array}$$

What is the insurance at 5s per cent on £8000?

$$\begin{array}{r} \text{£} \\ 100 \div \underline{8000} \\ 8000 \\ \hline \end{array}$$

$$\begin{array}{r} \text{£} \\ 5 \frac{1}{4} \quad \underline{80} \\ 20 \end{array}$$

Stocks

Are public funds. The value of a nominal £100 is sometimes above and sometimes below £100 to find its exact value is the object of this rule. If more, it is called above par, If less below par. Par here therefore means £100.

Rule. - Multiply by the rate per cent, and divide by 100, as in Simple Interest.

Transferring stocks, brokers charge $\frac{1}{8}$ per cent.

Value of £7000 East India stocks at $197\frac{3}{4}$ per cent?

$\frac{2}{8}$	$\frac{1}{4}$	7000
		197
		<hr/> 49000
		63000
		7000
$\frac{1}{8}$	$\frac{1}{2}$	1750
		<hr/> 875

$$100 \div \frac{1381625}{1381525} \text{ Ans } £13815.55$$

20

500

What is the value of £500 Bank stock at £215 per cent?

£	500
	215
	<hr/> 2300
	500

$$100 \div \frac{1000}{1075} \text{ Ans } £1075$$

Rebate or Discount.

Is an allowance made upon the payment of a debt before it is due.

Case 1. To find the discount and present value.

Rule. As £100, with its interest for the given time, is to the debt, so is that interest to the discount, which deducted from the debt, leaves the present value.

What is the present value of £320 due in 4 months allowing 6 per cent per annum?

$$\begin{array}{r}
 100 \\
 \underline{6} \\
 4 \frac{1}{3} \quad 500 \\
 100 \overline{) 2} \\
 \underline{100} \\
 \text{As } 102 \text{ ----- } 2 \text{ ----- } 320
 \end{array}$$

$$\begin{array}{r}
 102 \div \frac{2}{540/5} \\
 \underline{512} \\
 28 \\
 \underline{20} \\
 550 \overline{) 5} \\
 \underline{510} \\
 40 \\
 \underline{12} \\
 500 \overline{) 5} \\
 \underline{510} \\
 90 \\
 \underline{4} \\
 350 \overline{) \frac{3}{4}} \\
 \underline{300} \\
 54
 \end{array}$$

$$\begin{array}{r}
 \text{£ } s \text{ d} \\
 320 \cdot 0 \cdot 0 \\
 \underline{0 \cdot 5 \cdot 5 \frac{3}{4}} \\
 \text{£ } 313 \cdot 14 \cdot 0 \frac{1}{4}
 \end{array}$$

What is the present value of £420 due in 9 months at $4\frac{1}{2}$ per cent per annum?

$$\begin{array}{r} 6\frac{1}{2} \quad 4 \cdot 10 \\ 3\frac{1}{2} \quad 2 \cdot 5 \\ 1 \cdot 2 \cdot 5 \\ \hline 3 \cdot 7 \cdot 5 \end{array}$$

$$\begin{array}{r} 100 \cdot 0 \cdot 0 \\ \hline 103 \cdot 7 \cdot 5 - 3 \cdot 7 \cdot 5 = 420 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 2087 \\ 12 \\ \hline 24810 \end{array} \quad \begin{array}{r} 20 \\ \hline 57 \\ 12 \\ \hline 810 \end{array} \quad \begin{array}{r} 810 \\ \hline 4200 \\ 3350 \\ \hline 340200 \end{array}$$

$$\begin{array}{r} 24810 \\ \hline 810 \quad 340200 \left(\begin{array}{l} 13 \\ 24810 \end{array} \right. \end{array}$$

$$24810 \div \begin{array}{r} 92100 \\ 74430 \\ \hline 17570 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 353400 \left(\begin{array}{l} 14 \\ 24810 \end{array} \right. \end{array}$$

$$\begin{array}{r} 105300 \\ 99240 \\ \hline 6060 \end{array}$$

$$\begin{array}{r} \pounds \quad s \quad d \\ 420 \cdot 0 \cdot 0 \\ 13 \cdot 14 \cdot 2\frac{3}{4} \\ \hline \end{array}$$

$$\pounds 406 \cdot 5 \cdot 9\frac{1}{4}$$

$$\begin{array}{r} 12 \\ \hline 72720 \left(\begin{array}{l} 2 \\ 49520 \end{array} \right. \\ 23100 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 92400 \left(\begin{array}{l} 3 \\ 4 \\ 74430 \end{array} \right. \\ 17970 \end{array}$$

Case 2 - When the amount, that is, the debt and interest, is given, to find the time.

Rule. - As the interest of the debt for a year is to the whole interest, so is one year to the time required.

In what time will £ 270 amount to £ 300 at 5 per cent?

$$\begin{array}{r} 270 \\ 5 \\ \hline 100 \overline{) 1350} \\ 20 \end{array}$$

$$\begin{array}{r} 1000 \text{ yr} \\ \text{As } 13.10 - 1 - 300 \\ 20 \\ \hline 270 \end{array} \quad \begin{array}{r} £ \\ 270 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 20 \text{ years days} \\ 270 \overline{) 600} \left(2.81 \\ 540 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 385 \\ 270 \overline{) 21900} \left(81 \\ 2160 \\ \hline 300 \\ 270 \\ \hline 30 \end{array}$$

How long will £ 360 be in amounting to £ 500 at 3 per cent?

$$\begin{array}{r} £ \\ 360 \\ 3 \\ \hline 100 \overline{) 1080} \\ 20 \end{array}$$

$$\begin{array}{r} 1000 \text{ yr} \\ \text{As } 10.10 - 1 - 500 \\ 20 \\ \hline 216 \end{array} \quad \begin{array}{r} 500 \\ 360 \\ \hline 140 \end{array}$$

$$\begin{array}{r}
 140 \\
 20 \\
 215 \overline{) 2800} \left(\begin{array}{l} \text{years} \\ 12 \end{array} \begin{array}{l} \text{days} \\ 351 \end{array} \right. \\
 \underline{2592}
 \end{array}$$

$$\begin{array}{r}
 208 \\
 \underline{355}
 \end{array}$$

$$1040$$

$$1248$$

$$524$$

$$\begin{array}{r}
 215 \overline{) 7592.0} (351 \\
 \underline{648}
 \end{array}$$

$$1112$$

$$1080$$

$$320$$

$$215$$

$$104$$

Case 3. — The amount and time being given, to find the rate per cent.

Rule. — As the debt is to £100, so is the interest for the given time to the interest of the same, which divided by the time gives the rate per cent.

At what rate per cent will £400 amount to £480 in 4 years?

$$As \text{ £ } 400 - \text{ £ } 100 - 480$$

$$\begin{array}{r}
 400 \\
 \underline{80}
 \end{array}$$

$$\begin{array}{r}
 100 \\
 400 \overline{) 8000} (4 \overline{) 20} \\
 \underline{800} \quad \quad 5 \text{ per cent} \\
 \underline{\quad \quad 0}
 \end{array}$$

At what rate per cent will £380 amount to £494 in 5 years?

$$\begin{array}{r} \text{£} \quad \text{£} \quad \text{£} \\ \text{As } 380 - 100 - 494 \\ \hline 380 \\ \hline 114 \end{array}$$

$$\begin{array}{r} 100 \\ 380 \overline{) 11400} \quad (5) \overline{) 30} \\ \underline{1140} \\ \hline 0 \end{array} \quad \underline{5\%} \text{ per cent}$$

At what rate per cent will £640 amount to £697.12s in 3 years?

$$\begin{array}{r} \text{£} \quad \text{£} \quad \text{£} \quad \text{s} \\ \text{As } 640 - 100 - 697.12 \\ \hline 20 \\ \hline 12800 \end{array} \quad \begin{array}{r} 697.12 \\ \underline{640.0} \\ 57.12 \\ \hline 20 \\ \hline 1152 \end{array}$$

$$\begin{array}{r} 100 \\ 12800 \overline{) 115200} \quad (3) \overline{) 9} \\ \underline{115200} \\ \hline 0 \end{array} \quad \underline{3\%} \text{ per cent}$$

Compound Interest.

Is interest on interest as well as upon principal.
 Rule—Find the interest for 1 year, which
 add to the principal; take that amount
 as the principal of the second year; find the
 interest as before, and continue to add
 each year's interest for the time given.
 Subtract the principal from the
 last amount, and the difference will
 be the Compound Interest.

What will be the compound interest for
 £ 525 for $2\frac{1}{2}$ yrs at 3 per cent per annum?

$$\begin{array}{r}
 £ \\
 525 \\
 \quad 3 \\
 \hline
 18.75 \\
 \quad 20 \\
 \hline
 1500 \\
 \hline
 £ \\
 525.0 \\
 18.15 \\
 \hline
 543.15 \\
 \quad 3 \\
 \hline
 19.31.5 \\
 \quad 20 \\
 \hline
 525 \\
 \quad 12 \\
 \hline
 300 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 £ \quad s \quad d \\
 543.15.0 \\
 \quad 19.8.3 \\
 \hline
 563.1.3 \\
 \quad 3 \\
 \hline
 19.89.3.9 \\
 \quad 20 \\
 \hline
 1783 \\
 \quad 12 \\
 \hline
 1005 \\
 \hline
 £ \quad s \quad d \\
 \frac{1}{2} = 19.17.10 \\
 \quad 9.18.11 \text{ half yr} \\
 \hline
 563.1.3 \\
 573.0.2 \\
 525.0.0 \\
 \hline
 £ 48.0.2 \\
 \hline
 \hline
 \end{array}$$

What will be the compound interest for
£500 for 4 yrs at 5 per cent per annum?

£ s d
500.0.0

5
2500.0.0

£ s d
525.0.0

5
2025.0.0
20

500

£ s d
551.5.0

5
2755.5.0

20
1125

12
300

£ s d
578.10.3

15
2894.1.3

20
1881

12
975

4
300

£ s d
500.0.0

25.0.0
525.0.0

25.5.0
551.5.0

27.11.3
578.10.3

28.18.9³/₄
607.15.0³/₄

500.0.0
£ 107.15.0³/₄

Barter

In trade it frequently happens that one tradesman buys goods of another, and instead of paying money for them, gives other goods in return: this is called barter. The rule therefore shows how much of any article at a certain price should be given for any quantity at a different price. Thus, if a person has a number of books to sell at 6d each, and he wants quills for them at 5s per hundred, the rule tells him how many books he should give for the quills.

Rule - Find the worth of the given article either by the Rule of Three or Practice according to the nature of the question; and then, by one or the other of those rules, find what quantity of the other article this sum will purchase.

How much chocolate at 4s. 6d per lb. must be given for 2 cwt 2 qrs 19 lbs of sugar at 8d per lb?

cwt qrs lbs 2 2 19 <hr style="width: 50%; margin-left: 0;"/> 4 <hr style="width: 50%; margin-left: 0;"/> 10 <hr style="width: 50%; margin-left: 0;"/> 28 <hr style="width: 50%; margin-left: 0;"/> 89 <hr style="width: 50%; margin-left: 0;"/> 21 <hr style="width: 50%; margin-left: 0;"/> 4 5 299 <hr style="width: 50%; margin-left: 0;"/> 12 <hr style="width: 50%; margin-left: 0;"/> 54) 2392 (10 <hr style="width: 50%; margin-left: 0;"/> 10 <hr style="width: 50%; margin-left: 0;"/> 54) 258 (4 <hr style="width: 50%; margin-left: 0;"/> 218 <hr style="width: 50%; margin-left: 0;"/> 40 <hr style="width: 50%; margin-left: 0;"/> 10 <hr style="width: 50%; margin-left: 0;"/> 54) 640 (11 <hr style="width: 50%; margin-left: 0;"/> 54 <hr style="width: 50%; margin-left: 0;"/> 100 <hr style="width: 50%; margin-left: 0;"/> 54 <hr style="width: 50%; margin-left: 0;"/> 48 <hr style="width: 50%; margin-left: 0;"/> 10 <hr style="width: 50%; margin-left: 0;"/> 44 4 11 <hr style="width: 50%; margin-left: 0;"/> 218 <hr style="width: 50%; margin-left: 0;"/> 232 <hr style="width: 50%; margin-left: 0;"/> 218 <hr style="width: 50%; margin-left: 0;"/> 18
--	---

What quantity of coals at 30s per ton must be given for 400 deal boards at 18d per dozen?

$$\begin{array}{r}
 \text{dealboards} \\
 400 \\
 \times 18 \\
 \hline
 3200 \\
 400 \quad \text{tons} \\
 360 \overline{) 7200} \quad \underline{20} \\
 \underline{720} \\
 \dots 0
 \end{array}$$

How many lbs of currant at 12d per lb must be given for 5 cwt 3 qrs 9 lbs of plums at 6d?

cwt qrs lbs
5 3 9

$$\begin{array}{r}
 4 \\
 23 \\
 \times 28 \\
 \hline
 193 \\
 46 \\
 \hline
 553
 \end{array}$$

$$\begin{array}{r}
 12 \overline{) 3918} \quad \begin{array}{l} \text{lbs.} \quad \text{qrs} \\ \underline{320} \quad \underline{8} \end{array} \\
 \underline{36} \\
 31 \\
 \underline{24} \\
 78 \\
 \underline{72} \\
 6
 \end{array}$$

$$\begin{array}{r}
 12 \overline{) 90} \quad \begin{array}{l} \text{qrs} \\ \underline{8} \end{array} \\
 \underline{90}
 \end{array}$$

A linen draper and cheesemonger barter, the cheese monger has 40 cwt of cheese at 21s 6d per cwt and the linen draper has 10 pieces of Irish cloth, at £3.15s per piece, what is the difference in value?

$ \begin{array}{r} \text{s} \quad \text{d} \\ 21 \cdot 6 \\ \underline{12} \\ 258 \\ \underline{40} \\ 12 \overline{) 10320} \\ \underline{20} \\ 43 \end{array} $	$ \begin{array}{r} \text{£} \quad \text{s} \\ 3 \cdot 15 \\ \underline{20} \\ 75 \\ \underline{10} \\ 450 \\ \underline{75} \\ 20 \overline{) 1200} \\ \underline{60} \\ 43 \\ \text{£} \quad \underline{17} \end{array} $
---	--

Profit and Loss.

This rule shows what is lost or gained in buying and selling goods.

Rule. Subtract the cost price from the selling price, and multiply the remainder by the total quantity.

Bought 70 yds of muslin at 11s 8d per yd. sold it at 14s 2d what was the gain upon the whole?

$ \begin{array}{r} \text{s} \quad \text{d} \\ 14 \cdot 2 \\ \underline{11 \cdot 8} \\ 2 \cdot 0 \\ \underline{7 \times 8 + 4 = 70} \\ 22 \cdot 0 \\ \underline{8} \\ 9 \cdot 0 \cdot 0 \\ \underline{10 \cdot 0} \\ \text{£} \quad \underline{9 \cdot 10 \cdot 0} \text{ Gain} \end{array} $	$ \begin{array}{r} \text{s} \quad \text{d} \\ 2 \cdot 0 \\ \underline{4} \\ 10 \cdot 0 \end{array} $
---	---

Bought 205 pair of stockings at 15 d per pair
sold the whole for 10 £ 5, what was the loss?

$$\begin{array}{r}
 \text{pair} \\
 205 \\
 15 \\
 \hline
 1025 \\
 205 \\
 \hline
 12 \overline{) 3075} \\
 \underline{20} \quad 250 \quad 3 \\
 12 \quad 10 \quad 3 \\
 \underline{10} \quad 5 \quad 0 \\
 \hline
 \text{£ } 2 \cdot 11 \cdot 3 \text{ loss}
 \end{array}$$

Bought 137 lbs of chocolate at 4 s 1 1/2 d
per lb, sold it at 4 s 9 d per lb, what
was the gain?

$ \begin{array}{r} \text{£ } s \quad d \\ 0 \cdot 4 \cdot 1 \frac{1}{2} \\ \hline 12 \times 11 \\ \hline 2 \cdot 9 \cdot 8 \\ 11 \\ \hline 27 \cdot 4 \cdot 8 \\ 1 \cdot 0 \cdot 7 \frac{1}{4} \\ \hline 28 \cdot 5 \cdot 1 \frac{1}{4} \end{array} $	$ \begin{array}{r} \text{£ } s \quad d \\ 0 \cdot 4 \cdot 9 \\ \hline 12 \\ \hline 2 \cdot 17 \cdot 0 \\ 11 \\ \hline 31 \cdot 7 \cdot 0 \\ 1 \cdot 3 \cdot 9 \\ \hline 32 \cdot 10 \cdot 9 \\ 28 \cdot 5 \cdot 1 \frac{1}{4} \\ \hline \text{£ } 4 \cdot 5 \cdot 7 \frac{3}{4} \text{ gain} \end{array} $
--	--

Of Gain Percent

Percent means per £100; therefore, if you are required
to find the gain or loss per cent. It means
the gain or loss on laying out £100 to find
which work by the Rule of Three.

A draper buys cloth at \$12 a yard and sells it at \$14 a yard, what is the gain per cent?

$$\begin{array}{r} \text{S. d.} \\ \text{£. 10 } \frac{1}{2} \\ \hline \text{£. 2} \\ \text{£. 2} \end{array}$$

$$\begin{array}{r} \text{S. d.} \\ \text{£. 2} \end{array}$$

$$\begin{array}{r} 12 \\ \hline 98 \end{array}$$

$$\begin{array}{r} \text{£} \\ 100 \\ \hline 20 \\ \hline 2000 \\ \hline 12 \\ \hline \frac{1}{2} 24000 \\ \hline \text{£} \\ 192000 \\ 12000 \\ \hline 98) 204000 \end{array}$$

$$\begin{array}{r} (12) 2081 \frac{1}{2} \\ 20) 173.5 \\ \hline \text{£ } 8.13.5 \frac{1}{2} \end{array}$$

$$\begin{array}{r} 190 \\ \hline 800 \\ 784 \\ \hline 160 \\ 98 \\ \hline 62 \\ 4 \\ \hline 98) 248 \left(\frac{1}{2} \right. \\ 190 \\ \hline 58 \end{array}$$

A druggist buys gum at 55¢ per lb,
what must he sell it at per lb, to gain
20 per cent?

$$\begin{array}{r}
 \text{£} \quad \text{sd} \quad \text{d} \quad \text{£} \\
 100 : 5 \cdot 9 :: 120 \\
 \hline
 12 \\
 \hline
 09 \\
 120 \\
 \hline
 1380 \\
 09 \\
 \hline
 100) 8280 \\
 \hline
 12) 82 = 80 \\
 \hline
 80 \cdot 10 \frac{1}{4} 4 \\
 \hline
 320 \\
 4
 \end{array}$$

Fellowship.

Is a rule by which persons trading with a joint stock, ascertain their shares of gain or loss.

Case 1. - Fellowship without time.

Rule - As the whole stock is to the whole gain or loss, so is each man's stock to his share of gain or loss.

A and B commenced trade with £20000 of which A furnished £12000 they gained £800 what was each man's share of the profit?

$$\begin{array}{r} £ \\ 20000 \\ 12000 \\ \hline 8000 \end{array}$$

$$\begin{array}{r} £ \quad £ \quad £ \\ As \quad 20000 : 1800 :: 12000 \\ \quad \quad \quad 12000 \\ 20000 \div \quad \underline{21000000} \\ \quad \quad \quad A \quad \underline{1080} \end{array}$$

$$\begin{array}{r} £ \\ As \quad 20000 : 1800 :: 8000 \\ \quad \quad \quad 8000 \\ 20000 \quad \underline{14400000} \\ \quad \quad \quad B \quad \underline{720} \end{array}$$

A draper buys cloth at $\text{\pounds} 2$ d per yard and sells it at $\text{\pounds} 10$ d, what is the gain per cent?

Divide $\text{\pounds} 1000$ among three persons & that for every $\text{\pounds} 2$ A, has B shall divide $\text{\pounds} 3$ and C $\text{\pounds} 5$?

\pounds
2
3

\pounds
5

As $10 : 1000 :: \text{\pounds} 2$

$\frac{2}{10} \div 2000$
A 200

As $10 : 1000 :: \text{\pounds} 3$

$\frac{3}{10} \div 3000$
B 300

As $10 : 1000 :: \text{\pounds} 5$

$\frac{5}{10} \div 5000$
C 500

Double Fellowship

Is when the shares are subscribed for different periods of time.

Rule - Multiply each man's money by his time and proceed as in Partnership without time.

F and G enter into partnership F puts in $\text{\pounds} 500$ for 12 months, G $\text{\pounds} 300$ for 7 months, they clear $\text{\pounds} 350$ what is each ones gain?

Simple Multiplication

Teaches to find the amount of any number added together any number of times.

Rule—Multiply every figure in the line by the number which stands under the unit; set down under each figure all above even tens, and add 1 for each ten to the amount of the next figure.

Examples

$$\begin{array}{r} 913426541 \\ 2 \\ \hline 1826853082 \end{array}$$

$$\begin{array}{r} 617195895 \\ 5 \\ \hline 3085979475 \end{array}$$

$$\begin{array}{r} 875623425 \\ 3 \\ \hline 2626870275 \end{array}$$

$$\begin{array}{r} 718395819 \\ 6 \\ \hline 4310374914 \end{array}$$

$$\begin{array}{r} 774013854 \\ 4 \\ \hline 3096055416 \end{array}$$

$$\begin{array}{r} 889758077 \\ 7 \\ \hline 6228306539 \end{array}$$

A
as
ga
L
en

1219252041

8

9754016328

846391527

10

8463915270

1048006862

9

9432061758

861105185

11

9472157035

717553811

12

8610645732

742462836

9

6412165704

Case 2nd

When the Multiplier is above 12 and under 20,
multiply by the enlarged Table, performing the operation
in one line.

Multiply 2894 by 18

18

52092

And 472810 by 13

13

7446530

// 472801 by 14

14

6619214

// 348297 by 15

15

5224455

// 284162 by 16

16

4546592

// 185403 by 17

17

3151851

640036 by 18

18

11520648

300462 by 19

19

5708778

IV Holland Flanders and Germany.

They keep their accounts at Antwerp, Amsterdam, Brussels, Rotterdam, and Hamburg; some in pounds, shillings and pence, as in England; others in guilders, stivers and pennings; and exchange with us in our pound, at 33 s 4 d Flemish, at par.

8 pennings make 1 groat
2 groats or 16 pennings 1 stiver
20 stivers 1 guilder or florin

Also

12 groats or 6 stivers make 1 schelling.
20 schellings or 6 guilders . . . 1 pound

To change Flemish into Sterling

Rule. As the given rate: is to 1 pound :: so is the Flemish sum: to the sterling required.

To change Sterling into Flemish

Rule. As £ 1 sterling: is to the given rate :: so is the sterling given: to the Flemish sought.

Remitted from London to Amsterdam a bill of £ 754. 10 sterling, how many pounds Flemish is the sum, the exchange at 33 s. 6. Flemish per pound sterling?

$$\begin{array}{rcl} \text{As } 1 & : & 33.6 \\ 20 & & 12 \\ \hline 20 & & 402 \end{array} \quad \begin{array}{rcl} \text{£ } & & \text{s} \\ 754.10 & : & \\ & & 20 \\ \hline & & 15090 \\ & & 402 \\ \hline & & 30180 \\ & & 60360 \end{array}$$

$$\begin{array}{r} 20 \overline{) 606618.0} \\ 12 \overline{) 303309} \\ 20 \overline{) 25275.9} \\ \hline \text{£ } 1263.15.9 \end{array}$$

A merchant in Rotterdam remits £ 1263. 15. 9 Flemish to be paid in London, how much sterling money must he draw for, the exchange being at 33. 6 Flemish per pound sterling?

$$\begin{array}{rcl} & \text{£} & \text{£} \\ \text{As } 33.6 & : & 1 :: 1263.15.9 \end{array}$$

$$\begin{array}{r} 12 \\ \hline 402 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 25275 \end{array}$$

$$\begin{array}{r} 12 \text{ £} \text{ s } \text{ d } \\ 402 \overline{) 303309} \quad (754.10.0 \\ \underline{2814} \end{array}$$

$$2190$$

$$2010$$

$$1809$$

$$1608$$

$$201$$

$$20$$

$$\begin{array}{r} 20 \\ 402 \overline{) 4020} \quad (10 \\ \underline{4020} \end{array}$$

If I pay in London £ 852. 12. 6. sterling, how many guilders must I draw for at Amsterdam, exchange at 34 schels. 4 1/2 groats Flemish per pound sterling?

$$\begin{array}{rcl} & \text{£} & \text{schels. groats pms.} & \text{£} \text{ s } \text{ d } \\ \text{As } 1 & : & 34.4.4 & :: 852.12.6 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 12 \\ \hline 412 \end{array}$$

$$\begin{array}{r} 8 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 240 \\ \hline 3300 \end{array}$$

$$20$$

$$17052$$

$$12$$

$$204630$$

$$3300$$

$$61389000$$

$$613890$$

$$\begin{array}{r} 240 \overline{) 675279000} \quad (2813662 \\ \underline{48} \end{array}$$

$$195$$

$$\begin{array}{r} 192 \\ \hline 3 \end{array}$$

Questions for Exercise

How many buttons on the coats of a thousand men supposing there are a dozen on each coat?

$$\begin{array}{r} 1000 \\ \times 12 \\ \hline \text{Ans } 12000 \end{array}$$

There are 8766 hours in a year how many are in 5, in 11, in 48, and in 100 years?

Answers 43830. 96426. 420768. 876600.

How many hours has a boy lived who is ten years old?

$$\text{Ans } 87660$$

How many times will a persons pulse beat in a week or 168 hours, if it beat 3824 times in an hour?

$$\text{Ans } 642432$$

How many letters in 12 books each book containing 360 pages each page 36 lines and each line 36 letters

$$\text{Ans } 5598720.$$

Short

DIVISION

Simple Division teaches to find how many times one number is contained in another number. Rule.— Find how many times the divisor is contained in the first figure of the dividend, and put the figure answering to the number of times under it, as the first figure in the quotient if there be any remainder it should be carried, as so many tens and added to the next figure and the amount divided as before. Proceed in the same way to the last figure of the dividend. If the divisor is not contained in the first figure of the dividend take the first two figures. &c

In Division four principal parts are to be observed. 1st The Dividend or number by which given to be divided 2nd The Divisor or number by which you divide 3rd The Quotient or answer to the question and 4th The remainder which is always less than the Divisor and of the same name with the Dividend.

Rule - As the rate of exchange is to 1 crown,
so is the sterling sum to the french required.

How much sterling must be paid in London
to receive in Paris 758 crowns, exchange 50d
per crown?

$$\begin{array}{r}
 \text{Crown} \quad \text{d} \quad \text{Crown} \\
 \text{As } 1 : 50 :: 758 \\
 \hline
 50 \\
 4548 \\
 3790 \\
 12 \overline{) 42448} \\
 \hline
 20 \overline{) 35374} \\
 \hline
 \underline{\underline{\pounds 176 \cdot 17 \cdot 4}} \text{ Ans}
 \end{array}$$

A merchant in London remits $\pounds 176 \cdot 17 \cdot 4$ to his
correspondent at Paris; what is the value in
French crowns, at 50d per crown?

$$\begin{array}{r}
 \text{Crown} \quad \text{d} \\
 \text{As } 50 : 1 :: \pounds 176 \cdot 17 \cdot 4 \\
 \hline
 20 \\
 3537 \\
 12 \\
 56 \overline{) 42448} \quad \text{crowns} \\
 \hline
 392 \\
 324 \\
 280 \\
 \hline
 448 \\
 \underline{\underline{448}}
 \end{array}$$

758 Ans

2070

II Spain.

They keep their accounts at Madrid Castile
and Seville, in dollars reals and mara-
vadies, exchange by the piece of eight =
1/5.5 d at par.

34 maravedis make 1 real { eight
8 reals 1 quarter. or
10 reals 1 dollar.

Rule. As with France.

A merchant in Cadix remits to London
2547 pieces of eight at 50 s per piece how much
sterling is the sum?

As ⁰ Pos Eight 2 Pos Eight
 1 : 56 :: 2547
 56

$$\begin{array}{r} 50 \\ \hline 15282 \\ 12735 \\ 12) 142032 \\ \hline 20) 1188.6 \cdot 0 \\ \hline \pounds 594.6 \cdot 0 \end{array}$$

How many pieces of eight at 50^s each, will answer a bill of £594.6.0^d sterling?

As 2 248 £ 2
50 : 1 : : 594.6.0
20

11886

[illegible]

$$\begin{array}{r} \text{£} \\ 7050 \\ \hline 22200 \\ \hline 29310 : 7050 :: 350 \end{array}$$

$$\begin{array}{r} 350 \\ \hline 352500 \end{array}$$

$$\begin{array}{r} 21150 \\ \hline 29310 \overline{) 2407500} \left(\text{£ } 84 \text{ } 3 \text{ } 8 \text{ } \frac{1}{2} \right. \\ \underline{234480} \\ 122700 \\ \underline{117240} \\ 5460 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 29310 \overline{) 109200} \left(3 \right. \\ \underline{87930} \\ 21270 \\ 12 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 29310 \overline{) 255240} \left(8 \right. \\ \underline{234480} \\ 20760 \end{array}$$

$$\begin{array}{r} \frac{1}{2} \\ \hline 29310 \overline{) 83040} \left(\frac{1}{2} \right. \\ \underline{58020} \\ 24420 \end{array}$$

$$\begin{array}{r} \text{£} \quad \text{£} \quad \text{£} \\ \text{As } 29310 : 22200 :: 350 \\ \hline 350 \end{array}$$

$$\begin{array}{r} 00780 \\ \hline 29310 \overline{) 7791000} \left(\text{£ } 265 \text{ } 10 \text{ } 3 \text{ } \frac{1}{4} \right. \\ \underline{58020} \\ 192900 \\ \underline{175800} \\ 170400 \\ \underline{140550} \\ 23850 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 29310 \overline{) 477000} \left(16 \right. \\ \underline{29310} \\ 183900 \\ \underline{175800} \\ 8040 \end{array}$$

$$\begin{array}{r} 8040 \\ \hline 29310 \overline{) 90480} \left(3 \right. \\ \underline{87930} \\ 2550 \\ 4 \\ \hline 29310 \overline{) 34200} \left(11 \right. \\ \underline{29310} \\ 4890 \end{array}$$

Two graziers hired a piece of land for £80
 A puts in 50 sheep to graze for 5 months
 B 200 sheep for 3 months what has each
 to pay?

Sheep
 250
500

£80 : 250 :: 250

250

4000

150

£850) 20000 (23 10 7

1700

3000

2550

450

20

£850) 9000 (10

8500

500

12

£850) 10000 (11

5950

50

Sheep

£

Sheep

As 850 :

80

500

500

£850) 48000 (56 9 4 ³/₄

4250

5500

5100

400

20

£850) 8000 (9

7650

350

12

£850) 4200 (4

3400

800

4

£850) 3200 (3 ³/₄

2550

650

IIIIIIIIII
P IIIIIIIIIII

